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ABSTRACT

Six papers resulting from the fieldwork projects of members of the Summer Institute of Linguistics program at the University of North Dakota include: "A Relational Grammar Approach to Kera Syntax" (Janet K. Camburn), a syntactic study of an Afroasiatic language; "Clitic Doubling and M-Chains in Piraha" (Dan Everett), examining the applicability of Government and Binding Theory and additional principles to Piraha's clitic doubling without a special Case assigner; "A Beginning Sketch of the Huastec Noun Phrase" (Abdias Pablo E., Daniel Everett, James Walker), a preliminary analysis of noun phrases of a Mayan language; "Evidence for a Yaguan-Zaparoan Connection" (Doris L. Payne), which examines the shared features suggesting a genetic relationship between Peba-Yaguan and Zaparoan languages; "Locational Relations in Yagua Narrative" (Thomas E. Payne), an investigation of the role of location and direction in the organization of morphosyntax and discourse of a lowland Peruvian language; and "New Approaches to Coping with Stress: A Case Study in Conchucos Quechua" (Anne M. Stewart), demonstrating the effectiveness of the metrical approach to a stress system not previously studied. (MSE)

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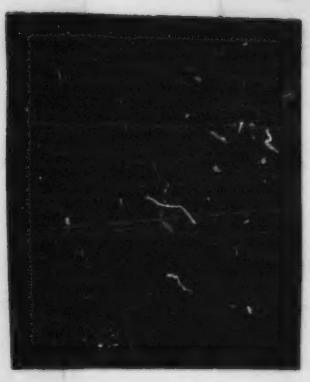

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PREFACE

The papers in this volume present some provisional results of recent and ongoing fieldwork projects of members of the Summer Institute of Linguistics who are associated with SIL's summer program at the University of North Dakota, either as teachers or research students. Jan Camburn's paper is her M.A. thesis submitted to, and approved by, the UND Graduate School this summer.

I am especially grateful to Diana Weber for handling all the details relating to the word processing and printing. I also thank Dan Everett, Steve Marlett, and Hu Matthews for their editing help.

D.C.D.

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A RELATIONAL GRAMMAR APPROACH TO KERA SYNTAX

Janet K. Camburn

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1 Introduction

Kera is an Afroasiatic language belonging to the Chadic family of languages. Greenberg (1963) mentions the **Tuburi** (Tupuri) language in his classification of Chadic languages. However, Tupuri belongs to the Adamawa family of Niger-Congo languages. Ebert (1975) points out that this misnomer is the result of a long-standing error, which itself was probably due to the fact that Tupuri and Kera are geographically next to each other. Ebert also points out that relatively little work has been done on the languages in this area, though there are very short word lists dating back to 1937 under the names of Tuburi-Kera and Tuburi-Fianga. And these lists are based on notes of a Count Adolf Friedrich de Mecklembourg. The only extensive work that has been done on

Kera is Ebert's work, comprising three books, one of texts (1975), a lexicon (1976), and a grammar (1979).

There are about 15,000 speakers of the Kera language. The center of the population is Kupor, in southwestern Chad near Fianga. This area is part of the Sahel and the terrain is savannah. Most of the Kera are agriculturalists, their main crops being red and yellow millet, though they also cultivate peanuts, groundnuts, and cola nuts. They keep some small livestock - chickens, guinea-fowl, and goats - for sacrifices and to celebrate special occasions like weddings, funerals, or visits.

This is a patrilineal society. The people keep cattle, which are used chiefly to pay the bride price. Both men and women work in the fields during the rainy season. Wives have the added responsibility of caring for children, preparing meals, and keeping the compound clean.

Education is gradually making an impact on the Kera people. Many children attend school for a few years at least, though the majority of the students are boys. The teaching is in French, the national language of Chad. Since most of the students come from families where only Kera is spoken, there are initial learning difficulties. However, there is a strong desire among the Kera for education. They are especially motivated to have books in their own language and to learn to read in Kera.

This thesis is based on field work done between June and December, 1982 and in September, 1983, under the direction of the Summer Institute of Linguistics. I was temporarily assigned to work with Marian Hungerford among the Kera. We lived in Kupor, staying in a compound which was no longer being used. During the first two months I did some language learning and work on the phonology to familiarize myself with the language. I then began to collect data for this research. My goal was to seek to understand the structure of Kera sentences, not merely to describe them. Having some understanding of the theory of relational grammar and the insights it offers, I chose to work within this framework. My language helpers were all Kera men who spoke French also. These included a school teacher, a pastor, an evangelist, agriculturalists, and several students. During this time I elicited over 1,000 sentences, most of which I verified with someone other than the person from whom they were originally elicited. In February, 1983, I entered these on computer and had them sorted according to various morphemes and phrase types. This served as the basis for this study.

2 Introduction to Relational Grammar

Relational grammar (RG) is a theory which has been developed over the past years by David Perlmutter, Paul Postal, David Johnson, and others. RG makes two claims which are unique to it and which distinguish it from other syntactic theories.

1. "The grammatical relations needed for individual grammars and for cross-linguistic generalizations cannot be defined in terms of other notions, but must be taken as primitive notions of syntactic theory." (Perlmutter 1983, pp. ix-x)

Three of these "primitive notions" are subject-of, direct object-of, and indirect object-of. They are relations which nominals may bear within a clause and are labelled 1, 2, and 3, respectively. These are called **term** relations. Some non-term relations (referred to as obliques) are benefactive (BEN), instrument (INSTR), location (LOC), direction (DIR), and goal (GOAL). Every basic clause also has a predicate (P), though this will not necessarily be a verb.

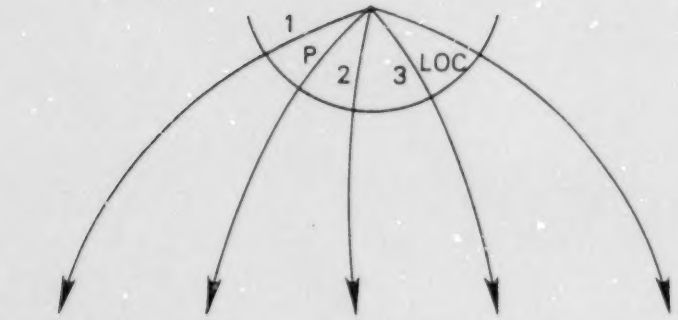
2. "It is necessary to posit distinct syntactic (i.e., nonsemantic, nonthematic) levels." (Perlmutter 1983, p. x)

Without distinct syntactic levels (called strata), it is not possible to fully account for the syntactic behavior of certain constructions in languages. This is most obvious in languages in which verb agreement rules must make reference to more than one level of relation (e.g. Allen and Frantz 1978). But many other facts can be shown to require multilevel descriptions.

Because distinct syntactic strata are posited, stratal diagrams are used to represent the different grammatical relations (GR's) that nominals bear in different strata.

In stratal diagram (A'), **Mary** is said to head a 1-arc, **book** heads a 2-arc, and so on.

(A´)

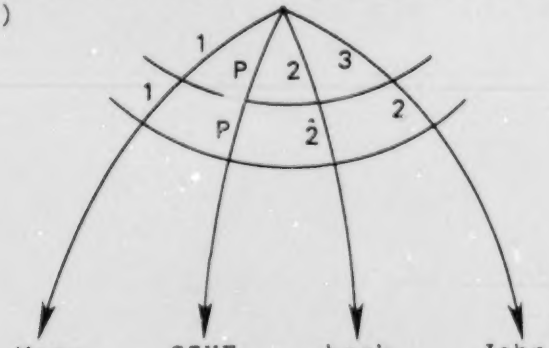


´Mary gave a book to John at the store´

In this diagram, the initial relations are the final relations, so there is only one stratum or level, as indicated by the presence of only one curved horizontal line.

In (B´) there is more than one stratum, since there is more than one level of grammatical relations.

(B´)



´Mary gave John a book´

John heads a 3-arc in the first stratum, but a 2-arc in the second stratum. **Book** heads an initial 2-arc, but its final relation is the chomeur (CHO) relation. This is according to the Chômeur Law. Perlmutter and Postal (1977) refer to it as the Chômeur Condition and state it informally as "if some nominal, N_a, bears a given term relation in a given stratum, S_i, and some other nominal, N_b, bears the same term relation in the following stratum, S_{i+1}, then N_a bears the Chômeur relation in S_{i+1}" (p. 408). In (B´), since **book** bears the term relation 2 in the first stratum and **John** bears it in the second stratum, **book** must bear the CHO relation in the second stratum. Another proposed universal, the Motivated Chômage Law, limits a nominal´s demotion to chômeur to the circumstances described in the Chômeur Law. In the same article Perlmutter and Postal go on to say that "a nominal that bears the 1-relation in the last stratum before it bears the Chômeur relation can be called a ´1-Chômeur´, one

that bears the 2-relation in the last stratum before it assumes the Chômeur can be called a '2-Chômeur, and likewise for 3-Chômeurs" (p.408). In the stratal diagrams 1-Chômeurs will be marked $\dot{1}$ and 2-Chômeurs as $\dot{2}$. The Stratal Uniqueness Law is a constraint against two nominals bearing the same term relation in the same stratum of a clause.

RG also posits a ranking system for the GR's: 1's rank higher than 2's, 2's higher than 3's, and 3's higher than obliques and chômeurs. When a nominal bears a higher ranked GR in a given stratum than it bore in the previous stratum, this is called an advancement. A retreat or demotion occurs when a nominal bears a lower ranked GR in the later stratum.

Frantz (1981) lists three ways that languages indicate GR's: 1) noun phrase marking, 2) verb marking, and 3) linear precedence. Noun phrase marking takes either the form of a case system or employs adpositions. Verb marking refers to the predicate agreeing with one or more of the nominals it governs. Linear precedence refers to word order. English, for example, uses all three ways of indicating GR's. In the sentence below, the preposition **to** indicates that **students** is a 3. The **-s** on **gives** indicates that the 1 in the clause is third person singular. Normal word order in English is determined by final GR's, as follows: 1 P 2 3, which is the ordering seen in (1) and (2).

(1) Charlie passed the basketball to George.
(2) The bard sang the ballad to Guinevere.

1 P 2 3

3 Kera syntax

3.1 Tone

The function of tone in Kera is, for the most part, grammatical. For example, **kəcəm** means 'thorns' regardless of which two possible tone patterns (high-low or high-mid) it carries. The lexical meaning is the same, the tone serving to indicate indefiniteness or definiteness.

In Kera, there are basically 3 tones: high, mid, and low. Glides also occur if a consonant morpheme carries a tone which is combined with the tone on the vowel just preceding it. Also, in cases of phonological rules which result in final vowel deletion, the tone from the deleted vowel remains and combines with the vowel of the preceding syllable, resulting in a glide if the two tones are different. In the word **ágày**, the first vowel is marked with a high tone and the second with a low tone.

The three most common uses of tone in Kera are: to distinguish between definite and indefinite on nouns which end in consonants or semi-vowels, as in (3); to differentiate between certain tenses/aspects of verbs, as in

(4); and to distinguish between two plural pronouns, as in (5).

(3)	indefinite	definite	gloss
	yáw	yâw	'pelican'
	ágày	ágāy	'hoe'
	kə́càm	kə́cām	'thorns'

(4)	ten á-bə̀-hàmé	'I was just eating' (past continuing into present)
	ten á-bə̀-hàmè	'I was going to eat' (but didn't)
	ten bə̀-hàmé	'I am eating'
	ten bə̀-hàmè	'I will eat'

(5)	áŋ	'we-inclusive'
	aŋ	'you-plural'

In this paper only high and low tone will be marked. Mid tone will be unmarked except in cases of glides or where a morpheme made up of a consonant only carries a mid tone.

3.2 Kera verbs

Ebert (1979) gives a fairly complete description of the Kera verb system. Following her terminology, I will present forms of a stem to illustrate the main verb tenses. Ebert discusses verb classes and presents phonological rules which influence the final form the verb takes. These rules are operative in the example given, but will not be detailed here.

The verb I have chosen for this is **ham** 'eat', belonging to Ebert's class 2b verbs. (In the verb schemata [center column], the verb stem is abbreviated ST.)

(6)			
	Present	ST + e	hàm-è
	Progressive	bə + ST + e + á	bə̀-hàm-é
	Future	ST + yaŋ	hàm-yaŋ
		bə + ST + yaŋ	bə̀-hàm-yaŋ
		bə + ST + e	bə̀-hàm-è
	Past I	ST + ŋ	hàmà-ŋ
	Past II	a + ST + ŋ	á-hàmà-ŋ
	Past perf I	ST + ŋ + né	hàmà-ŋ-né
	Past perf II	a + ST + ŋ + né	á-hàmà-ŋ-né
	Optative I	ST + la	hàm-lǎ
	Optative II	a + ST + la	á-hàm-là
	Irrealis	a + sa + ST + e	á-sá-hàm-è

For statives, Kera has no overt verb in the present tense. I will refer to this as a zero copula which, as we will see, has an overt allomorph in all but simple present tense.

(7) Pɔ̂l Ø kìmplí
Paul is tall
'Paul is tall'

(8) Sárà Ø mar Jɔ́
Sarah is wife John
'Sarah is John's wife'

The verb **ji**, literally 'do', (what Ebert [1979] refers to as a "helping verb"), is used in its conjugated forms to express various tenses of the stative, as in (9) and (10).

(9) tən á-jə̀-là hə̀lgə
I OPT-do-OPT woman
'if I were a woman ...'

(10) tam ásá-jì kúmná də sengá
you:m IRR-do chief of land
'you would be chief of the land'

The passive form of a verb is made up of of the auxiliary **bə-** plus reduplication of the verb stem, as in (11).[2] Passive verbs and statives are alike in that there is no overt tense marking in the present tense (12) and other tenses make use of the helping verb **ji** (13).

(11) PASV: bə + ST + REDUP + e bə̀-hàm-hàm-è
FUT PASV: ji + FUT + PASV jì-yaŋ bə̀-hàm-hàm-è
OPT PASV: ji + OPT + PASV jə̀-là bə̀-hàm-hàm-è

(12) gùgúŕ bə̀-ay-áyé á Máríăn
rooster:DEF AUX-give-REDUP to Marian
'the rooster is given to Marian'

(13) gùgúr jì-yaŋ bə̀-hàm-hàmè
rooster:DEF do-FUT AUX-eat-REDUP
'the rooster will be eaten'

3.3 Terms and term marking

Kera makes use of linear order, auxiliary verb agreement, and pronominal case to indicate grammatical relations (GRs). The normal word order in a clause having all three final term GRs is 1 P 2 3, as illustrated in (14):

(14) ten áy hàrgá-ŋ á nawrə́-n
I give goat-DEF to sister-my
1 P 2 3

Final 1's have an immediate pre-verbal position. If present, the auxiliary prefix **bə-** in certain forms agrees in number and gender with the final 1. This depends not only on the verb tense, but also on the speaker. Two of the

forms where speakers most consistently affirm that there is agreement are the progressive and the passive. The form for these two is sometimes the same (see note 2): AUX-ST-REDUP. If there is agreement, the **bə-** is the masculine singular form, **də-** the feminine singular and **gə-** the plural (compare (15)-(17)).

(15) tam bə̀-gà-gè hə̀lgə́-ŋ alúma
you:m AUX:m-send-REDUP woman-DEF market
'you(m) are sending the woman to the market'

(16) te də̀-gà-gè hə̀lgə́-ŋ alúma
you:f AUX:f-send-REDUP woman-DEF market
'you(f) are sending the woman to the market'

(17) ár gə̀-gà-gè hə̀lgə́-ŋ alúma
we:excl AUX:pl-send-REDUP woman-DEF market
'we are sending the woman to the market'

This can prove to be a useful test for final subjecthood. In other cases it will be useful to use pronoun replacement to test for final relations. The pronominal forms for subject are listed below:[3]

(18)

I	ten
you:masculine	tam
you:feminine	te
he	o∼wə
she	a
we:exclusive	áŋ
we:inclusive	ár
you:plural	aŋ
they	ye∼yə

Final 2 nominals are characterized by their position immediately after the verb or verb stem, as in (19). One property of certain verb enclitics is that they come immediately after the final 2 and cliticize to it instead of to the verb stem. This characteristic will be referred to as 'tense cliticization' and will later be used to test for final 2-hood. These enclitics are **-á** (part of the progressive verb tense) which is glossed PROG in (19); **-né** (marking past perfect) as in (20); **-la** (optative) as in (21); and **-yaŋ** (future) as in (22). The tense enclitics attach to the last element of the noun phrase, and since modifiers follow the head in Kera NP's, these clitics are often seen attached to adjectives, as in (20).

(19) ten bə̀-hàm sɔ̃́-ŋ-a
I AUX-eat food-DEF-PROG
'I am eating the food'

(20) Pɔl ásá-ŋ kárâŋ kɔ́mtɔ́ gɔ̀bɔ̀rwɔ́-né
Paul see-PST goats big:pl white:pl:DEF-PERF
'Paul had seen big white goats'

(21) ten bèl míntí tam sebe hàrgâ-ŋ-la
I want that you:m fill goat-DEF-OPT
'I want you to feed the goat'

(22) Pɔ́l hàm sɔ̌-ŋ-yaŋ
Paul eat food-DEF-FUT
'Paul will eat the food'

The pronominals take two forms in Kera. Those that are separate words I will call strong pronouns and those that are cliticized to the verb I will call weak pronouns. The pronominal forms for 2's, with the exception of the first person plural forms, are weak and are cliticized to the verb stem. (See Ebert [1979] for rules governing this.) This will be referred to as direct object pronoun fusion and will also be used as a test for 2-hood.[4] Listed below are examples taken from Ebert (1979, pp. 14-16) demonstrating this fusion.

(23) gloss	d.o.suffix	**sep-** 'satisfy'	**mirg-** 'greet'
mɛ̀	-n	sepen	mirgin
you:m	-m	sepem	mirgim
you:f	-i	sipi	mirgi
him	-u	sípú	mírgú
her	-a/-ra	sépá	mírgɔ́
you:pl	-ŋ	sepeŋ	mirgiŋ
them	-i	sípí	mírgí

Since the first person plural pronouns do not fuse to the verb, tense enclitics will attach to them as to other nouns as final 2. Where the pronouns are fused with the verb, the tense enclitics attach to the verb with the fused pronouns, as in (24).

(24) ten bɛ̀l-ù-yaŋ
I want-3sgm.d.o.-FUT
'I will want it'

For all the indirect object pronouns there are strong and weak forms. The preposition **á** marks the strong forms of final 3's and there can be no tense cliticization to such final 3's. The strong (unfused) pronominal forms for 3's are listed below:

(25) to me á nɔnɔn
to you:m á nɔnɔm
to you:f á nini
to him á nunu

to her	á nənə
to us:excl	á áŋ
to us:incl	á áré
to you:pl	á nənəŋ
to them	á niini

Weak indirect object pronouns are fused to the verb in the same way that direct object pronouns are. Tense cliticization to verbs with fused indirect object pronouns is the same as for fused direct object pronouns. For verbs in Ebert's classes 1 and 2a, there will be tone differences between the verb forms which have fused direct object pronouns and those which have fused indirect object pronouns (see (26)). For verbs in class 2b, the forms are the same.

(26)

d.o. pronoun		i.o. pronoun	
ə́y-ú	'give it(m)'	əy-u	'give to him'
áy-á	'give it(f)'	ay-a	'give to her'
ə́y-í	'give them'	əy-i	'give to them'

When both 2 and 3 pronouns are fused in the same verb, the indirect object pronoun takes precedence over the direct object pronoun in governing the gender/number distinctions. However, the forms clearly reflect that both 2 and 3 pronouns are involved. The suffix **-də** or **-d** registers that there are two fused pronouns. In the examples given below, the direct object pronoun can be either singular or plural.

(27)

d.o.	i.o.	verb	gloss
3sg/pl	3sgm	əy-d-ù-yaŋ	'will give it/them to him'
3sg/pl	3sgf	ay-d-ə-yaŋ	'will give it/them to her'
3sg/pl	3pl	əy-yì-d-ì-yaŋ	'will give it/them to them'

3.4 Oblique markings

The obliques Instrument, Accompaniment, Comitative, and Manner, which Africanists often group together under the term Associative, are marked with **də**, which can generally be glossed as 'with' (see (28)-(31)).

(28) ten hàm sə̌-ŋ də karməkáśə́-n INSTRUMENT
I eat food-DEF with fingers-my
'I eat the food with my fingers'

(29) ten hàm sə̌-ŋ də kə́śáw ACCOMPANIMENT
I eat food-DEF with sauce
'I eat the food with sauce'

(30) ten hàm sə̌-ŋ də séé-n COMITATIVE
I eat food-DEF with brother-my
'I eat the food with my brother'

(31) tɛn hàm sɔ̂-ŋ də wálé MANNER
I eat food-DEF with joy
'I eat the food with joy'

Location in either time or space is governed by the use of various body parts - **gidə** 'womb' meaning 'inside', **cər** 'head' meaning 'on top of', **gud** 'buttocks' meaning 'after', **sar** 'rib' meaning 'next to', **dər** 'eyes' meaning 'in' (as "in the soup"), etc. (see (32)-(34)). A final **-a** suffix is attached to the locative nominal; when the nominal ends in a vowel, a phonological rule operates to delete the suffix.[5] When body parts function as prepositions, they always govern the locative case.

(32) ten gè hàrgâ-ŋ gìdà hiúw-a
I put goat-DEF womb pen-LOC
'I put the goat inside the pen'

(33) Pɔ́l wɔ́ra apɔ́ya cɔ́r sésíŋ-a kás wálgâŋ
Paul already high head chair-LOC hand fear
'Paul was already high up on the chair, gripped by fear'

(34) Pɔ́l jì walga gùd jòŋré bà míntí tó
Paul do fear buttocks work rel-pro that he
jù-n-ù ablàw
do-PST-it:m much
'Paul is afraid after working that he worked too much'

The preposition **kə** is used to mark both the oblique Source and the Possessor of alienable objects, though in certain sentences there is ambiguity regarding which it indicates (see (35)-(37)).

(35) yə gè kuli kə́ Pɔl
they build house of Paul
'they build Paul's house'

(36) ten hàŋ sɔ̂-ŋ kə́ pũ̂r
I took food-DEF from(of) boy:DEF
'I took the food from (of) the boy'

(37) ten dò-ŋ tɔ́rtí kə́ hàlgâ-ŋ
I seize-PST knife from(of) woman-DEF
'I seized a knife from (of) the woman'

Benefactive is marked by the same preposition **á** that marks 3's. The weak pronominal BEN's have the same form as weak pronominal 3's and are fused to the verb in the same way.

(38) pur cílí-ŋ gìsì á nənə
boy weave-PST mat for her
'a boy wove a mat for her'

(39) tə́r hə̀rgə́-ŋ á áŋ
girl dance-PST for us:incl
'a girl danced for us'

(40) ten har-d-ə
I take-d.o.-3sgfBEN
'I take it for her'

Thus Ben's are formally indistinguishable from 3's with respect to certain criteria, and are probably final 3's. We will see later, however, that initial Ben's may be distinguished from initial 3's by a syntactic test (see section 4.4).

4 Advancements

4.1 Passive

Passive is defined as the 2 of a transitive stratum advancing to 1 (Perlmutter and Postal 1977). Here I will seek to show that Kera has clauses which qualify as Passive within the RG framework. I propose that (43) and (44) are cases of Passive in Kera; i.e., that 'goat(s)' is the initial 2 and final 1 in these sentences; compare (43) and (44) with their non-passive counterparts (41) and (42), respectively. A stratal diagram is given for (43).

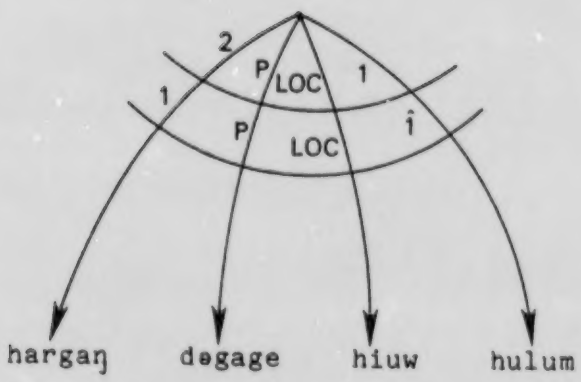
(41) hùlúm gà-ŋ hàrgə́-ŋ gìdə̀ hiúw-a
man:DEF put:sg-PST goat-DEF womb pen-LOC
'the man put the goat in the pen'

(42) hùlúm và-ŋ kárə́ŋ gìdə̀ hiúw-a
man:DEF put:pl-PST goats:DEF womb pen-LOC
'the man put the goats in the pen'

(43) hàrgə́-ŋ də̀-gà-gè gìdə̀ hiúw-a kás
goat-DEF AUX:f-put:sg-REDUP womb pen-LOC hand
hùlúm-ā
man-LOC
'the goat was put in the pen by the man'

(44) kárə́ŋ gə̀-và-vè gìdə̀ hiúw-a
goats:DEF AUX:pl-put:pl-REDUP womb pen-LOC
'the goats were put in the pen'

(43′)



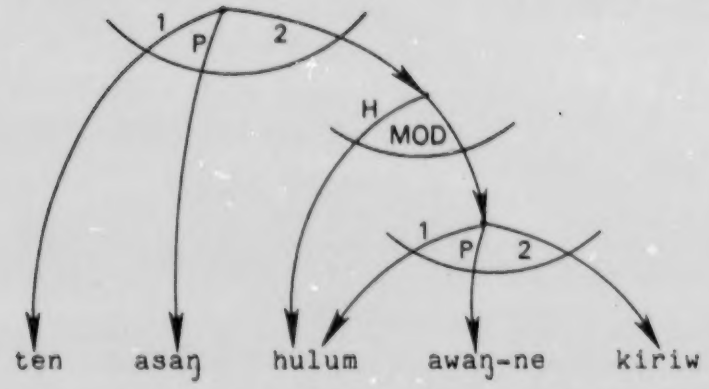
As discussed in section 3.2, the passive verb form is bə + ST + REDUP + e. There are several indications that (43) and (44) are cases of Passive. Looking first at evidence for the final relations, we see that **hargaŋ** in (43) is in the pre-verbal position normally occupied by a final 1 (and not in the immediate post-verbal position of a final 2). Second, this is a verb that requires auxiliary agreement with the final 1 (see section 3.3). The feminine form of the auxiliary agrees with **hargaŋ**, a feminine noun, in (43) and the plural form with **karaŋ**, a plural noun, in (44).

Other evidence for the final subjecthood of ′goat′ is provided by the strategy for relative clause formation in Kera. Before presenting this argument, it is necessary to give a brief account of relative clauses in Kera.

The relative clause in Kera is introduced by a relative clause marker plus the subordinate clause flag **minti** (glossed ′that′) . The relative clause marker (RCM) agrees with the head noun in number and gender. The masculine form is **bə** the feminine form **də**, and the plural form **gə**. In relative clauses, the head noun bears two relations, one in the matrix clause and one in the modifying clause. As Frantz (1981) points out, languages deal with this by allowing either Status Quo or else Pro-replacement. Kera uses both strategies. In those cases where the head noun heads a final 1 arc in the relative clause the Status Quo strategy is used, so that the head noun is multiattached (see (45) and its corresponding stratal diagram).

(45) 1-Rel
ten ásá-ŋ hùlúm bə̀ míntí áwá-ŋ
I see-PST man:DEF RCM:m that kill-PST
kíríw-né
leopard-PERF
′I saw the man that had killed a leopard′

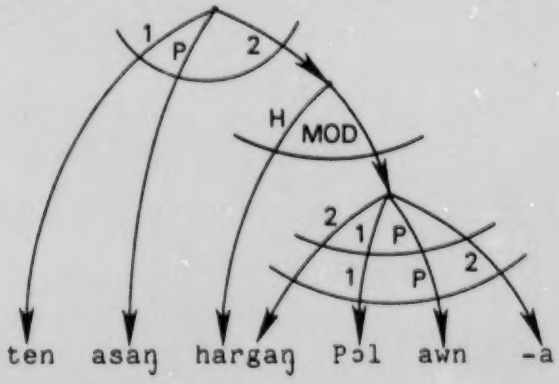
(45′)



If the head noun bears any other relation in the modifying clause, a pronoun replacer "picks up" the multiple dependency in the modifier clause (see (46)-(49) and the stratal diagram for (46)).

(46) 2-Rel
ten ásá-ŋ hàrgâ-ŋ dè míntí Pɔ́l
I see-PST goat-DEF RCM:f that Paul
áw-n-á
kill-PST-3sgf.d.o.
~~'I saw~~ the goat that Paul killed'

(46′)



(47) 3-Rel
ten ásá-ŋ hùlúm bè míntí Jɔ
I see-PST man:DEF RCM:m that John
ɘy-n-u hárgâ-ŋ-né
give-PST-3sgm.i.o. goat-DEF-PERF
'I saw the man that John gave the goat to'

(48) 3-Rel (initial BEN)
tər dè míntí púr cil-n-ə
girl RCM:f that boy:DEF weave-PST-3sgf.i.o
gìsí-ŋ túgú-ŋ
mat-DEF come-PST
'the girl for whom the boy wove the mat came'

(49) LOC-Rel
ten ásá-ŋ kɔ́bāŋ gà míntí Pól
I see-PST tree:DEF:coll RCM:pl that Paul
áwá-ŋ kírĭw ádāŋ
kill-PST leopard:DEF there
'I saw the tree where Paul killed the panther'

Returning now to the discussion of passive, if 'goat' is a final 1 in the putative cases of passive, such as (43) and (44), then we expect that there will be no pronoun replacer in the corresponding relative clause with 'goat' as head. Sentence (50), which corresponds to (43), has a relative clause with no pronoun replacer, providing an argument that 'goat' heads a final 1 arc in the relative clause.

(50) ten ásá-ŋ hàrgá-ŋ dà míntí dà-gà-gè
I see-PST goat-DEF RCM:f that AUX:f-put:sg-REDUP
gìdà hiúw-a
womb pen-LOC
'I saw the goat that is put in the pen'

As evidence for the initial 2-hood of the final 1's in (43) and (44), there are certain verb stems like **ga** 'put' which agree with one of their dependents. As I will show in chapter 6, there is evidence that the correct statement of this constraint is that the verb stem displays number agreement with the initial 2. Comparing (41) and (42), which involve only one stratum of GR's, **ga** is the singular form agreeing with the singular 2 nominal and **va** is the plural form agreeing with a plural 2 nominal. In (43) and (44) the verb stems agree with the final 1, supporting its status as initial 2.

The initial 1 may or may not be specified. If it is specified in a passive clause, it is flagged as a 1-CHO by **kas** (literally 'hand').

In Kera, Passive is sanctioned but not necessary. It is employed most often when the initial 1 is unspecified. (Another option when the initial 1 is unspecified is to use the third person plural pronoun **ye** 'they' with the active voice.)[6]

4.2 3 Advancement

We have seen that an initial 2 can be a final 1. It is also possible for an initial 3 to be a final 1. I will show that in these cases there are three strata, the initial 3 bearing an intermediate 2-relation and a final 1 relation. I will also show there is a constraint that if the initial 3 advances to 2, it must advance to 1. Consider the following sentences:

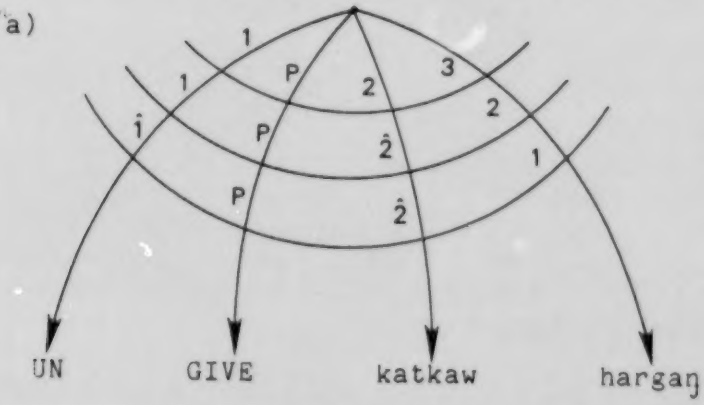
(51) ten áy katkáw á hàrgâ-ŋ
I give grass to goat-DEF
'I give grass to the goat'

(52) *ten áy hàrgâ-ŋ katkâw
I give goat-DEF grass:DEF
'I give the goat the grass'

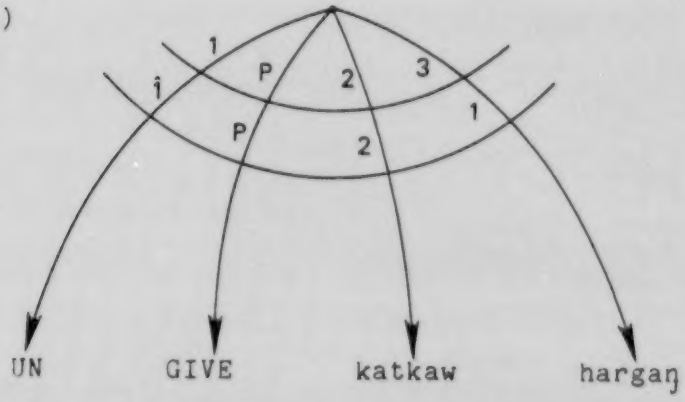
(53) hàrgâ-ŋ də-ay-áyé katkáw
goat-DEF AUX:f-give-REDUP grass
'the goat was given grass'

The initial and final relations are the same in (51), but in (53) the initial 3 is in the immediate pre-verbal position of a final 1 and the auxiliary agrees with it. (52) has the form we might expect if 3-2 alone were sanctioned. (The asterisk indicates that a sentence is ungrammatical.) I will compare two analyses of a sentence such as (53), one in which this is a case of 3-2-1 advancement (i.e., 3-2 advancement plus necessary advancement of the non-initial 2), and another in which (53) involves 3-1 advancement. (53'a) and (53'b) are the stratal diagrams for the two alternative analyses of (53), 3-2-1 and 3-1, respectively. (UN is the abbreviation used when the agent is unspecified.)

(53'a)



(53'b)



The 3-2-1 analysis and the 3-1 analysis make different predictions about the final status of the initial 2. In the 3-2-1 analysis, the initial 2, according to the Chômeur Law, is a final chômeur, while under the 3-1 analysis, the initial 2 is a final 2. While in (53) the initial 2 is in the immediate post-verbal position of a final 2, there is no reason to expect that this position would not be occupied by a 2-Cho in a clause without a final 2. (**katkaw** 'grass' is plural in Kera, so the pronoun in (55) is the plural form.) Now consider the following:

(54) ten bə̀-ay-áye katkâw á hàrgâ-ŋ
I AUX:m-give-REDUP grass:DEF to goat-DEF
'I am giving the grass to the goat'

(55) ten bə̀-əy-áy-á á hàrgâ-ŋ
I AUX:m-give-REDUP-3pl.d.o. to goat-DEF
'I am giving it (i.e., grass) to the goat'

In (55) (compare (54)), we see that **katkaw**, the initial and final 2, has been replaced by a direct object pronoun which is fused to the verb. So we might expect that **katkaw** in (53) could also be replaced by a pronoun if it were a final 2, i.e., if the initial 3 advanced directly to 1.

(56) *hàrgá-ŋ də̀-əy-áy-á
goat-DEF AUX:f-give-REDUP-3pl.d.o.
'the goat is given it(pl)'

(56) is ungrammatical with a fused direct object pronoun. The 3-2-1 analysis, in which the pronoun would be a 2-Cho rather than a final 2, gives us a basis to explain why this is so, whereas the 3-1 analysis provides no basis for the inability of the pronoun to fuse as a final 2 ought to. So stratal diagram (53'a), presented earlier, correctly represents sentence (53).

As just discussed, there is a constraint in Kera that in cases of 3-2, passive is obligatory. ((52) showed that 3-2 without 2-1 was ungrammatical.) The only possible exception to this constraint that I know of involves predicates of speaking where the initial 2 is a clause. Comparing (57) and (58), 3-2 is not sanctioned for such verbs when the initial 2 is a non-clausal nominal (58). However, (59) is a candidate for a 3-2 analysis where the initial 2 is a clause.

(57) ten wátá-ŋ kə̄l á hùlùm
I say-PST words to man
'I said something to a man'

(58) *ten wátá-ŋ hùlùm kɛ̀l
I say-PST man words
'I said (told) him something'

(59) ten wátá-ŋ kormo-n míntí ye jò'é káásâw
I say-PST son-my that they sow millet:DEF
nánánómó
how
'I told my son how they sow millet'

If we attempt to flag the addressee of the clause with the 3 flag **á**, putting it in the position of a final 3 following the complement, we find that it is interpreted as a Ben of the complement, as in (60). Nor is it grammatical to change the position of the putative initial 3 to precede the complement, still leaving the 3 flag **á** (see (61)).

(60) ten wátá-ŋ míntí ye jò'é káásâw
I say-PST that they sow millet:DEF
nánán'mó á kormó-n
how to son-my
'I told how they sow millet for my son'
*'I told my son how they sow millet'

(61) *ten wátá-ŋ á kormó-n míntí .....
I say-PST to son-my that .....
'I said to my son that .....'

Comparing (59) and (62), we see that **kormon** is replaced with a fused direct object pronoun (note the high tone) and not an indirect object pronoun. Also **kormon** as a final 2 bears the tense enclitic **-yaŋ** in (63).

(62) ten wódɔ́-n-ú míntí ye jò'é káásâw
I say-PST-3sgm.d.o. that they sow millet:DEF
nánánómó
how
'I told him how they sow millet'

(63) ten wáté kormó-n-yaŋ míntí .....
I say son-my-FUT that .....
'I will tell my son that .....'

Assuming that **kormon** is an initial 3, we can account for all the above facts by saying that this is a case of necessary 3-2 where 2-1 is not necessary.

4.3 Ben-3 advancement

Looking back at the 3-2-1 analysis, we see that it can help us distinguish initial 3's from Ben's. Since Ben's and 3's are flagged by the same preposition **á** and have the same strong and weak pronominal forms (see section 3.4), it is

possible to theorize that a Ben-3 advancement is both sanctioned and necessary. If this is the case, then we might expect that the initial Ben can be a final 1. Comparing (64) and (65), we see that an initial Ben cannot be a final 1. Such a sentence is ungrammatical, so we either must add a constraint limiting 3-2 Advancement to initial 3's, or rule out Ben-3 Advancement. Either way Ben's must be distinguished from 3's in the language, despite their superficial similarities.

(64) ten vè katkáw gìdə̀ hiúw-a á hàrgâ-ŋ
I put:pl grass womb pen-LOC for goat-DEF
'I put grass in the pen for the goat'

(65) *hàrgâ-ŋ də̀-gà-gè katkáw gìdə̀ hiúw-a
goat-DEF AUX:f-put:sg-REDUP grass womb pen-LOC
'the goat was put grass (for) in the pen'

4.4 Summary

In this section we have seen that passive is sanctioned but not necessary. We also looked at cases of 3 advancement. There is a constraint, however, that in cases of 3 advancement where the initial 2 is not a clause, the 3 must be the final 1. We argued for a 3-2-1 analysis over a 3-1 analysis in such cases. We also have shown that on the basis of these facts, one must differentiate initial 3's from initial Ben's.

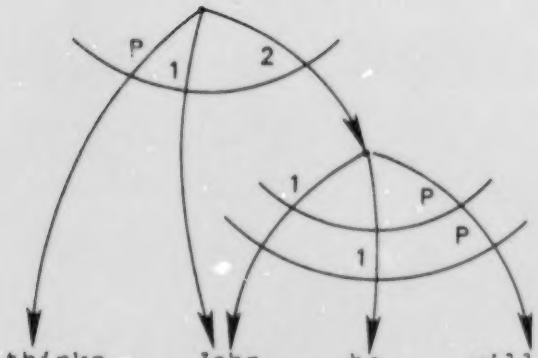
5 Multiple dependencies

As summarized by Frantz (1981), languages have essentially four ways of dealing with multiple dependencies when the upstairs 1 is the same as the downstairs 1. (In a multiple dependency, a given nominal is a dependent of more than one governor.) The four ways of dealing with such situations are classified by Frantz as Status Quo, Pro-Replacement, Equi-Erasure, and Equi-Subject Union (ESU). Status Quo is used when the head noun heads a final 1 arc in a relative clause, as we saw in section 4.1. The other three strategies will be discussed in this section.

5.1 Pro-Replacement

In cases of Pro-Replacement, the multiple dependency is dealt with by a pronoun. To give an example from English, instead of saying "John thinks that John will go", we say "John thinks that he will go." The initial 1 GR in the subordinate clause is erased by a pronoun which replaces it. The network looks like this:

(C′)



John thinks that he will go

We note that in the English sentence above, the pronoun **he** can refer either back to John or to someone else. The exact meaning of the sentence is unclear without the context. In Kera, though, there are two sets of third-person pronouns. One set is used if the noun being replaced is the same as the noun in the main clause, and the other is used elsewhere. This system is referred to in the literature as the logophoric system. It makes clear whether the person who is thinking, feeling or speaking is referring to himself or to someone else. In other words, there are two possible ways to say the equivalent English sentence above.

(66)a. Jɔ́ ɗík míntí wə ɗé Mútà wə ≠ Jɔ́
b. Jɔ́ ɗík míntí tó ɗé Mútà tó = Jɔ́
John thinks that he go Fianga
'John thinks that he is going to Fianga'

Both the pronouns **tó** and **wə** mean 'he', but the **tó** makes it clear that the reference is to the matrix subject. The equivalent logophoric pronoun for 'she' is **tá**, and for 'they' is **té**.

(67)

	logophoric	non-logophoric
3sg.m.	tó	o ~ wə
3sg.f.	tá	a
3pl.	té	ye ~ yə

In the sentences given above, the GR of the noun being replaced is 1. In the following sentences we see that the same logophoric pronouns are used to replace nouns with other GR's also:

(68)a. Pɔ́l ɗík míntí Jɔ̃ wírk-ú-yaŋ
b. Pɔ́l ɗík míntí Jɔ̃ wérké-tó-yaŋ
Paul think that John pay-him-FUT
'Paul thinks that John will pay him'

(69)a. Jɔ́ bèl míntí ten ay hàrgâ-ŋ-lá á nunu
b. Jɔ́ bèl míntí ten ay hárgâ-ŋ-lá á tó
John want that I give goat-DEF-OPT to him
'John wants me to give the goat to him'

In (68) **tó** replaces a noun bearing a 2 GR and in (69) it replaces a noun bearing a 3 GR. The logophoric pronouns are invariable no matter what GR they bear, while regular pronouns vary depending on their GR (see section 3.3.). The regular pronouns **can** be used in cases of co-referentiality, but only if the context makes it very clear who is being referred to. That is, (66a) **could** mean that John thinks that he himself will be going to Fianga, but only if the conversation has been going on for awhile and the context makes that very clear. Otherwise the logophoric pronouns are the pronouns of preference in cases of co-referentiality.

Next we consider cases which involve more than two clauses, all with the same English translation: 'John said that he wants me to give the goat to him'.

(70) Jɔ́ wátâ-ŋ míntí ...
John say-PST that ...
a. .. tó$_i$ bèl míntí ten ay hàrgâ-ŋ-lá á nunu$_{i,j}$
b. .. tó$_i$ bèl míntí ten ay hàrgâ-ŋ-lá á tó$_i$
c. .. wə$_{j,i}$ bèl míntí ten ay hàrgâ-ŋ-lá á tó$_i$
.. he$_{j,i}$ want that I give goat-DEF-OPT to him
(i ≠ j)
'John said that he wants me to give the goat to him'

In (70a) the **tó** refers to John and the **nunu** most likely refers to someone other than John, though if the context so indicated, it could refer to John also. In (70b), the first **tó** refers back to John and the second **tó** refers back to the first **tó**, and therefore back to John also. In (70c) **wə** could refer either to someone else (most likely) or, if context made it clear, to John. The **tó** refers back to **wə**, whoever that may be. If **wə** does not refer to John, then the **tó** cannot be referring to John. A logophoric pronoun always refers back to the noun or pronoun in the clause immediately governing it, and if a logophoric pronoun is part of a coreference chain, as in (70b) and (70c), all pronouns in the chain must be logophoric.

5.2 Equi-Erasure and Equi-Subject Union

The other two strategies for dealing with multiple dependencies when the upstairs and downstairs clauses share a 1 are Equi-Erasure and Equi-Subject Union (ESU).

Equi-Erasure refers to the erasure of the downstairs 1 when the nominal bearing the 1-GR is also the upstairs 1. In Frantz' attempt to provide a heuristic for his students, he wrote: "In cases of 'erasure' of the ds [downstairs] 1 relation, the ds [downstairs] verb will exhibit no evidence

that it has a final subject. Thus there will be no agreement with a final subject, nor placement of a final subject in a position that is uniquely determined by its dependency on that verb." (Frantz 1981, pp. 51-52). Other initial dependents of the downstairs verb are also final dependents of it. Both the upstairs P and the downstairs P are live.

Unlike Equi-Erasure, ESU has only one final live verb, and therefore only one final clause. "ESU requires the same nominal to be both ds [downstairs] and us [upstairs] 1. In the resultant union, one verb is a P_e [predicate emeritus or dead verb] and a dependent of the other verb; the former dependents of the P_e are dependents of the live P in the union." (Frantz 1981, p. 45). Languages apparently differ with respect to whether the upstairs P or the downstairs P will be the live verb in ESU.

I propose that Kera uses both of these strategies and that sentences (71) and (72) are cases of Equi-Erasure, while (73) and (74) are cases of ESU. Compare the proposed stratal diagrams - (71′) and (73′) - for (71) which is Equi-Erasure and (73) which is ESU.

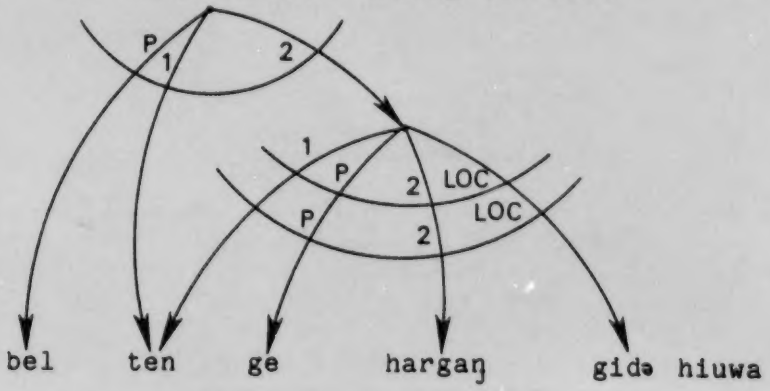
(71) ten bèl gè hàrgâ-ŋ gìdə̀ hiúw-a
I want put:sg goat-DEF womb pen-LOC
'I want to put the goat in the pen'

(72) ten ɗə́lá-ŋ hàm so
I try-PST eat food
'I tried to eat food'

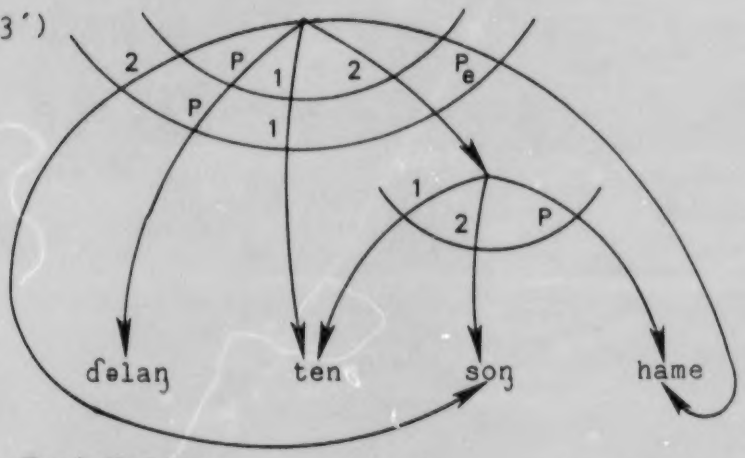
(73) ten ɗə́lá-ŋ sə̌-ŋ hàmé
I start-PST food-DEF eat
'I started to eat the food'

(74) ten á-təwá-ŋ-sə̌-ne wə̂r hàmə́-ŋ
I PERF-finish-PST-food:DEF-PERF completive eat-DEF
'I had just finished eating the food'

(71′)



(73′)



5.3 Equi-Erasure

Looking at the first two sentences (71) and (72) as cases as Equi-Erasure, we observe first of all that the 1 of the downstairs clause is lexically absent. This is what we would expect in a case of Equi-Erasure (though the same holds true for (73) and (74)). If this were Pro-Replacement, both the upstairs 1 and the downstairs 1 would be lexically present (and we have seen that this is an acceptable option for certain verbs [section 5.1]). If this is Equi-Erasure, then we can say that the upstairs 1 erases the downstairs 1.

Second, looking at sentence (75), the downstairs verb exhibits no evidence that it has a final subject. The auxiliary **bə-** of the downstairs verb is invariable though the initial 1 is feminine gender.[8]

(75) te də̀-bàl-bə̀lè bə̀-gè hàrgə̂-ŋ
you:f AUX-want-REDUP AUX-put:sg goat-DEF
gìdə̀ hiúw-a
womb pen-LOC
′you are wanting to put the goat in the pen′

As evidence that (71) and (72) are not cases of ESU, note that the initial downstairs 2′s are in the linear position of final 2′s of the downstairs predicate, immediately following it. If these nominals were not final downstairs 2′s, but final dependents of the upstairs predicates, we would expect to be able to say sentences (76) and (77). In (76), I have put ′goat′ (the initial downstairs 2 of (71)) immediately following the matrix verb. And in (77), I have substituted a fused pronoun for ′goat′ on the matrix verb. In both cases, the result is ungrammatical.

(76) *ten bèl hàrgə̂-ŋ gè gìdə̀ hiúw-a
I want goat-DEF put:sg womb pen-LOC
′I want the goat put in the pen′

(77) *ten bèl-à gè gìdə̀ hiúw-a
I want-3sgf.d.o. put:sg womb pen-LOC
′I want it put in the pen′

Furthermore, if **hargaŋ** 'goat' and **so** 'food' are final 2's of the downstairs predicate as the Equi-Erasure, but not the ESU analysis, predicts, we expect that their respective pronouns will be fused with the downstairs predicate. Sentences (78) and (79) confirm that such fusions are grammatical.

(78) ten bèl gàr-á gìdè hiúw-a
I want put:sg-3sgf.d.o. womb pen-LOC
'I want to put it in the pen'

(79) ten ɗélá-ŋ hèm-ù
I try-PST eat-3sgm.d.o.
'I tried to eat it'

If the initial downstairs 2 is the final downstairs 2, so that the downstairs predicate has dependents in the final stratum, then the downstairs predicate is live.

Finally, not only is the downstairs predicate live, but so is the upstairs predicate. This is evidenced by the agreement of the progressive tense auxiliary with the final 1 in (75) and (80).

(80) ár gə-bàl-bèlè bə-gè hàrgá-ŋ
we:excl AUX:pl-want-REDUP AUX-put:sg goat-DEF
gìdè hiúw-a
womb pen-LOC
'we are wanting to put the goat in the pen'

In sum, sentences (71) and (72) are cases of Equi-Erasure since they meet the criteria for it: 1) the downstairs 1 GR is erased; 2) the downstairs predicate exhibits no evidence of a final subject; 3) the downstairs predicate retains its other dependents; and 4) both the downstairs and upstairs predicates are live. See the stratal diagram (71') for (71), which was given in section 5.2.

5.4 Equi-Subject Union

By contrast, (73) and (74) are cases of ESU, the most noticeable difference between these and the cases of Equi-Erasure being the linear position of the initial downstairs direct object. Though languages may differ as to which predicate will be live and which emeritus in ESU, in Kera we will see that it is the upstairs P which is live. I will show that the downstairs P is dead and that its dependents are final dependents of the live upstairs predicate.

First, the initial upstairs 1 is in the linear position of a final upstairs 1, which is expected if the upstairs P is live. Second, assuming that the upstairs P is live and that the downstairs P is emeritus, we expect that the initial dependents of the downstairs P will be final

dependents of the upstairs P. There are three indications that this is the case. First, the initial downstairs 2 is linearly in the immediate post-verbal position of an upstairs 2. Second, the suffix of the upstairs P cliticizes to it (see (74)), which occurs only in cases of final 2's. Third, if this is a final upstairs 2, we expect that the pronoun replacer will be fused to the upstairs predicate, and this is the case in (81).

(81) ten bə̀-ɗə́l-ú hàmé
I AUX-start-3sgm.d.o. eat
'I am starting to eat it'

If the downstairs P is emeritus, it will have no dependents, and there are no apparent final dependents of **hame** 'eat'. Also as a P_e, it is a dependent of the live predicate. It is interesting to note that as a dependent of the upstairs P, it can be nominalized, taking a definite marker, as in sentence (74). (It can apparently even function as an upstairs 2 in the absence of any other final 2, at least in regard to tense cliticization: in (82) the tense clitic **-a** is cliticized to the nominalized predicate emeritus. However, it is possible that this sentence has an entirely different analysis.)

(82) ten bə̀-ɗél-hàmé-ŋ-a
I AUX-start-eat-DEF-PROG
'I am starting the eating'

We have shown that (73) and (74) are cases of ESU, since there is only one final live verb and the initial dependents of the downstairs P as well as the downstairs P itself are final dependents of the live upstairs predicate. See the stratal diagram given in section 5.2.

6 The proper formulation of the stem agreement rule

As mentioned earlier in section 4.1, there are certain verbs, the stem of which agrees with one of the term relations in number (singular/plural). I stated there that the verb stem agrees with the initial 2. In this section I will discuss the evidence for this analysis, particularly in relation to the Unaccusative Hypothesis.

Ebert (1979) presents a list of the verbs in question. She states that the stem agrees with the subject of an intransitive verb or with the direct object of a transitive verb (p.70). To put it in other words, it agrees with the absolutive (the 2 of a transitive or 1 of an intransitive verb). This list of verbs is presented below:[9]

(83) sg. stem	pl. stem	gloss
dàr-	tar-	'put up against, lay beside'
gàr-	kar-	'plant'
jàm-	cam-	'cut, sever'
bàrg-	parg-	'pull out'
gàa-	vaa-	'throw, cause, send, put'
jàa-	caa-	'break'
luu-	lup-	'climb up, climb down'
tuu-	tup-	'lay, lie down'
ɗuu-	ɗup-	'scoop, ladle'
suu-	sup-	'educate, rear'
soo-	sop-	'blow out, puff up'
dòo-	top-	'trap'

Ebert does not consider, however, that there are distinct syntactic levels and that initial relations may not be final relations. So there are actually three competing hypotheses for the formulation of the verb stem agreement rule:

1. the verb stem agrees with the final absolutive
2. the verb stem agrees with the initial absolutive
3. the verb stem agrees with the initial 2

To test hypothesis 1, we require constructions with verbs of (83) in which the final absolutive is not the initial absolutive. The only construction I have studied which has the potential to serve as a test of hypothesis 1 involves the verb **gaa** 'cause'. We see in (84) and (85) that the upstairs verb 'cause' has its singular form despite the fact that the final upstairs 2 is plural. This is explained if the final 2 of this verb is an ascendee, as I propose in section 7.1 (see arguments there that 'children' and 'us' are final upstairs 2's in these examples).[10]

(84) ár gà-ŋ kámár kəncə́-ŋ
we:excl cause:sg-PST children little:pl-DEF
bə̀-hàgé
AUX-cry
'we made the little children cry'

(85) koŋ gà-ŋ áré bə̀-hàgé
rain cause:sg-PST us:excl AUX-cry
'the rain made us cry'

Before going on to hypotheses 2 and 3, I will first discuss the Unaccusative Hypothesis, since this will bear on the final choice between these two hypotheses.

Perlmutter and Postal (1984a) have proposed the Unaccusative Hypothesis, the most basic claim of which is that, "The initial stratum of some basic clauses is unaccusative" (p. 95). An unaccusative stratum is defined

as a stratum with a 2, but no 1. "The Unaccusative Hypothesis predicts that languages will have phenomena with respect to which nominals in some intransitive clauses will behave like subjects, while those in others will behave like direct objects" (p. 97).

Unaccusative Advancement (UA) refers to the advancement of a 2 in an unaccusative stratum to 1. It differs from the 2 to 1 advancement of Passive in that for Passive the advanced 2 is from a stratum which also has a 1, and so the advancement puts the 1 en chômage; UA does not create a chomeur, as there is no 1 in the preceding stratum.

According to Perlmutter and Postal (1984a), there are certain classes of predicates which determine unaccusative initial strata. These include the class of "predicates whose initial nuclear term is semantically a Patient" (p. 98). Some English verbs which are in this semantic class are: burn, drop, float, glide, flow, drip, sway, roll, boil, melt, bud, grow, die, open, break, and vanish, etc. It is suggested that predicates with equivalent meanings in other languages may exhibit syntactic behavior which points to analyses involving initial unaccusative strata.

Taking just a few of these predicates, I present below some sentences which are candidates for an Unaccusative Advancement analysis.

(86) tə́yə̂-ŋ jà-ŋ
calabash-DEF break:sg-PST
'the calabash broke'

(87) kə́yə̂w cá-ŋ
calabashes:DEF break:pl-PST
'the calabashes broke'

(88) saamá-ŋ jə̀mà-ŋ
cord:sg-DEF sever:sg-PST
'the cord separated (broke)'

(89) saamá-ŋ cə̀mà-ŋ
cord:pl-DEF sever:pl-PST
'the cords separated (broke)'

(90) ku kulí-ŋ bì-ŋ wə́ra
mouth:sg hut-DEF open:sg-PST completive
'the door opened'

(91) ku kulí-ŋ pí-ŋ wə́ra
mouth:pl hut-DEF open:pl-PST completive
'the doors opened'

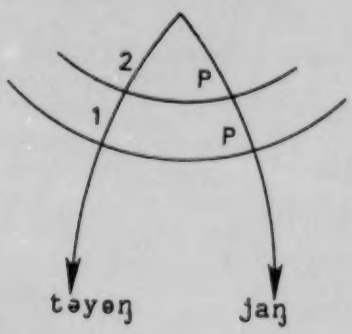
(92) sə̌-ŋ bə̀-kí
food-DEF AUX-burn
'the food is burning'

(93) kán áyé
water:DEF flow
'the water flows'

(94) kór dà Jɔ́ áyé
blood of John flow
'John bleeds'

Note that in (86)-(91) the verb stem agrees with the final 1. If these clauses are given a traditional monostratal analysis, one in which the initial relations are the final ones, we can accept hypothesis 2 (the verb stem agrees with the initial absolutive). However, if hypothesis 3 is true, then these sentences require a bistratal analysis in which there is no initial 1, and the final 1 is an initial 2. These would be cases of UA and the verb stem would agree with the initial 2. The diagram for (86) under the UA analysis is as in (86').

(86')



Any evidence which favors the initial 2 agreement rule (hypothesis 3) over an initial absolutive agreement version (hypothesis 2) would serve to support the initial unaccusative analysis for sentences such as (86)-(91). In section 7.3 I will present evidence that the patient nominal of sentences such as (86)-(94) is not an initial 1, assuming that the constraints proposed there on "tough" ascensions hold. Furthermore, the absolutive agreement version gives us no reason to expect that intransitive verbs with "agentive" subjects would not exhibit stem agreement; yet in every case found so far, the nominal governing stem agreement is never an agent.

Further support for the initial 2-hood of the patient nominal in (86)-(91) is seen in (95)-(100), the corresponding transitive clauses of (86)-(91).

(95) ten jà-ŋ táyɔ́-ŋ
I break:sg-PST calabash-DEF
'I broke the calabash'

(96) ten cá-ŋ kə́yə̂w
I break:pl-PST calabashes:DEF
'I broke the calabashes'

(97) ten jə̀mà-ŋ saamá-ŋ
I sever:sg-PST cord:sg-DEF
'I severed the cord'

(98) ten cə̀mà-ŋ saamá-ŋ
I sever:pl-PST cord:pl-DEF
'I severed the cords'

(99) ten bì-ŋ ku kulí-ŋ
I open:sg-PST mouth:sg hut-DEF
'I opened the door of the hut'

(100) ten pí-ŋ ku kulí-ŋ
I open:pl-pst mouth:pl hut-def
'I opened the doors of the hut'

As Perlmutter (fide Frantz [personal conversation]) has pointed out for verbs like English **open**, this is elegantly accounted for by saying that such verbs require a 2 (the patient) in their initial stratum and additionally accept a 1 (the agent) in the initial stratum; only with both arguments are they transitive verbs.

Alternatively, sentences such as (95)-(100) might be taken to suggest that these verbs are essentially transitive, and thus that the clauses of (86)-(91) are transitive at the initial level, but with the initial 1 (the agent) unspecified. However, this would predict passive morphology (see sections 3.2 and 4.1), which is not present in (86)-(91).

6.1 Summary

While a good deal more evidence is required before the Unaccusative Advancement analysis for verbs such as those in (86)-(91) (and by extension, verbs such as those in (92)-(94) as well) can be considered well established, such facts as are available (stem agreement never with an agent; the "tough" ascension constraint [section 7.3]; the existence of corresponding transitives, as in (95)-(100); and the lack of passive morphology in (86)-(91)) favor the UA analysis over the other possibilities considered. And if we accept the UA analysis, then we must accept hypothesis 3 which states that the verb stem agrees with the initial 2.

Having tentatively ruled out hypothesis 1 (stem agrees with final absolutive) in causative clauses such as (84) and (85), and finding no evidence for stem agreement with initial absolutives which are initial 1's, we conclude that the correct form of the stem agreement rule is as follows:

If a verb stem has singular and plural variants, the choice of stem is determined by number of the initial 2.

7 Ascensions

Given constructions in which one clause (the downstairs clause) is a dependent of another clause (the upstairs clause), ascension rules allow a nominal dependent of the downstairs clause to bear a non-initial grammatical relation in the upstairs clause. This nominal is called an "ascendee".

Perlmutter and Postal (1974) formulated two laws which operate in such cases, as reported in Perlmutter (1983). The Relational Succession Law states: "An ascendee assumes within the clause into which it ascends the grammatical relation of its host NP (the NP out of which it ascends)" (p.35). (In this statement of the law, which dates from RG's Transformational days, NP is equivalent to "nominal".) The Host Limitation Law states: "Only a term of a grammatical relation can be the host of an ascension" (p. 53).

We will see that Kera sanctions ascensions where the downstairs relation of the ascendee is either a 1 or a 2. In cases of 1 ascension, the host clause may be either 1 or 2. With 2 ascensions, the host is a 1. Ascensions where the host clause is a 1 will be called Tough Ascensions.

7.1 Ascensions out of 2-host

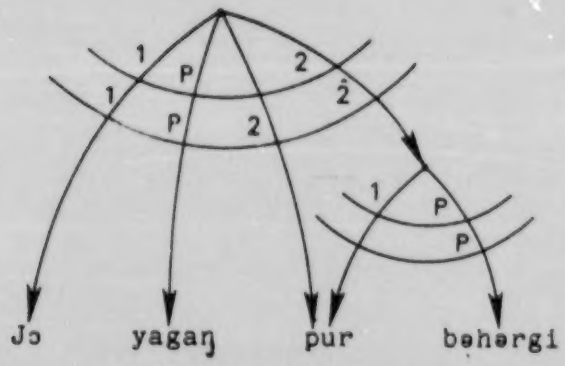
We will consider, first of all, ascension of a 1 with a host downstairs clause that bears a 2 relation to the upstairs clause. There are apparently at least two verbs in Kera which govern this - 'cause' and 'allow'. (In the causative construction **ge** 'put' is glossed 'cause'.) (102') is the proposed stratal diagram for (102) if this is an ascension.

(101) a. hùlúm gà-ŋ púr bè-hèrgí
man:DEF cause-PST boy:DEF AUX-dance
'the man made the boy dance'

b. Jɔ gà-ŋ púr bə-áy tɛ́yɛ́-ŋ-a
John cause-PST boy:DEF AUX-give calabash-DEF-PROG
á hèlgɛ́-ŋ
to woman-DEF
'John made the boy give the calabash to the woman'

(102) Jɔ yágá-ŋ púr bè-hèrgí
John allow-PST boy AUX-dance
'John let the boy dance'

(102′)



The position of **pur** ′boy′ in (101)-(102) is compatible with analyses in which this nominal is either a constituent of the downstairs clause (as final 1), in which case this is not an ascension; or it is a constituent of the upstairs clause. Concentrating on (102), if this is 1 ascension, we expect ′boy′ to bear a 2 relation upstairs since the sentential complement which hosts it is a 2. I give three arguments that ′boy′ is an upstairs 2.

If we replace **pur** with a pronoun, as in (103) and (104), we see that we have a direct object pronoun which is fused with the upstairs predicate. This is accounted for if **pur** is a final upstairs 2 in (101)-(102).

(103) hùlúm gè-n-ù bè-hèrgí
man:DEF cause-PST-3sgm.d.o. AUX-dance
′the man made him dance′

(104) Jɔ yégé-n-ú bè-hèrgí
John allow-PST-3sgm.d.o. AUX-dance
′John let him dance′

If **pur** were a constituent of the downstairs clause, we would expect to get the subject pronoun **wə** ′he′, but this is ungrammatical for (102):

(105) *hùlúm yágá-ŋ wə bè-hèrgí
man:DEF allow-PST he AUX-dance
′the man allowed him to dance′

Second, if we apply the test of tense cliticization (see section 3.3) using the future tense, the future clitic **-yaŋ** cliticizes to **pur**, as in (106) and (107), and not to the verb stem, as in (108), which is ungrammatical.

(106) hùlúm gè-púr-yaŋ bè-hèrgí
man:DEF put-boy-FUT AUX-dance
′the man will make the boy dance′

(107) Jɔ yágá-púr-yaŋ bə̀-hə̀rgí
John allow-boy-FUT AUX-dance
'John will let the boy dance'

(108) *hùlúm gè-yaŋ púr bə̀-hə̀rgí
man:DEF cause-FUT boy AUX-dance
'the man will cause that the boy dance'

This is what we expect if the downstairs 1 is an ascendee, bearing a final 2 relation to the upstairs predicate.

As a final argument, the ascension analysis predicts that the downstairs 1, as an upstairs 2, may advance to final upstairs 1, to give a passive. This is borne out in that (109) is grammatical:

(109) púr bə̀-gà-gè bə̀-hə̀rgí
boy:DEF AUX-cause-REDUP AUX-dance
'the boy was made to dance'

(110) shows that 1 ascension is not necessary with 'allow' (though it is with 'cause').

(110) Jɔ yágá-yaŋ míntí Pɔ́l ɗe-la
John allow-FUT that Paul go-OPT
'John will let Paul go'

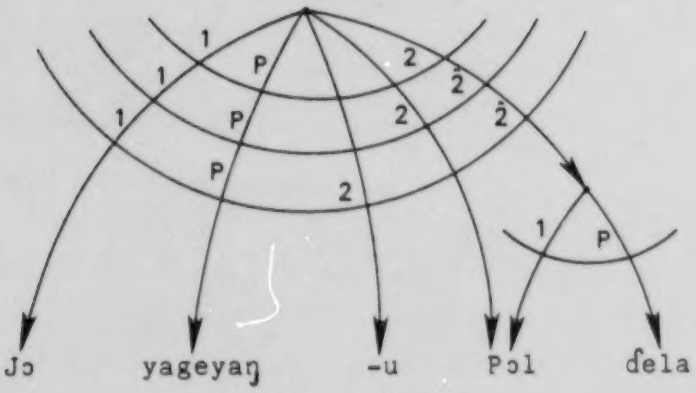
In the sentences presented thus far, the multiattachment of the ascendee is resolved by erasure of the downstairs arc. But the verb **yage** allows Pro-replacement as an alternate means of resolving the multiattachment. Interestingly, the pronoun may replace the multiattached nominal in either the upstairs or the downstairs clause, as in (111) and (112).

(111) Jɔ yúg-ú-yaŋ míntí Pɔ́l ɗe-la
John allow-3sgm.d.o.-FUT that Paul go-OPT
'John will let Paul go'
(Lit:'John will let him that Paul go')

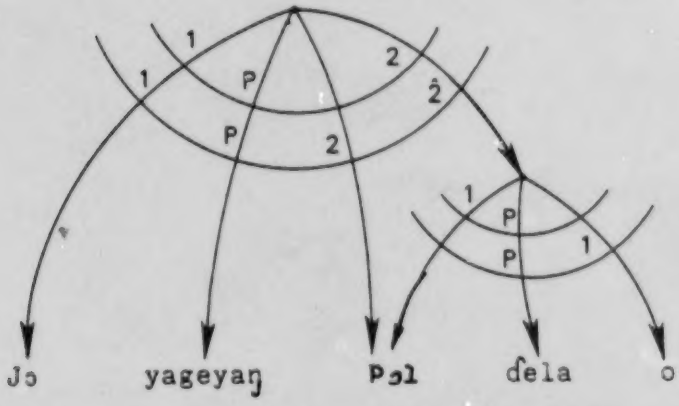
(112) Jɔ yágé-Pɔ́l-yaŋ míntí o ɗe-la
John allow-Paul-FUT that he go-OPT
'John will let Paul go'
(Lit:'John will let Paul that he go')

Both (111) and (112) involve 1 ascension. In (111) the pronoun replacement is in the upstairs clause and the pronoun is fused to the verb. In (112) the pronoun replacement is in the downstairs clause. Below are stratal diagrams for these two examples.

(111′)



(112′)



We note, however, that 'cause' does not permit a corresponding sentence without 1 ascension.[11] Nor does it permit the type of pronoun replacement that we have with the verb **yage**. Under the 1 ascension analysis of clauses with 'cause', the final upstairs 2 is not the initial upstairs 2. If it **were** the initial 2 of 'cause', we would expect that the verb stem would agree with it, for as we have already seen in chapter 6, the verb stem agreement rule states that those verbs which require stem agreement will agree with the initial 2. But when the final 2 is replaced by a plural, there is no change in the verb stem (e.g., see (84) in chapter 6).[12] There is another possible explanation for the lack of stem agreement is that the morpheme for 'cause' only coincidentally has the same shape as one variant of the verb **ge** which requires verb stem agreement, and that the verb 'cause' is simply a different verb which does not trigger stem agreement. In that case 'boy' in (101a and b) above could conceivably be both the initial and final 2; i.e., that the sentences given above with 'cause' do not involve ascensions. If 'cause' is not an ascension verb and 'allow' is, this could account for the differences between these two verbs with respect to the possibility of upstairs replacement by a pronoun. This question must be left open for now.

7.2 Ascensions out of a 1-host[13]

In this section we will consider a case of 1 ascension where the ascendee is a non-initial upstairs 1. Before presenting the ascension examples, I discuss corresponding sentences which exhibit no ascensions. Sentences (113) and (114) below show simple clauses in active and passive with the predicate **hum ku** 'to bother' (literally 'take mouth'); (115) and (116) show the same active and passive clauses as complements of the predicate 'hard'. (A stratal diagram is given for (116).)

(113) Jɔ hùm ku Pɔ́l
John take mouth Paul
'John bothers Paul'

(114) Pɔ́l bə̀-hùm-hùm ku ƙás Jɔŋ-a
Paul AUX:m-take-REDUP mouth hand John-LOC
'Paul is bothered by John'

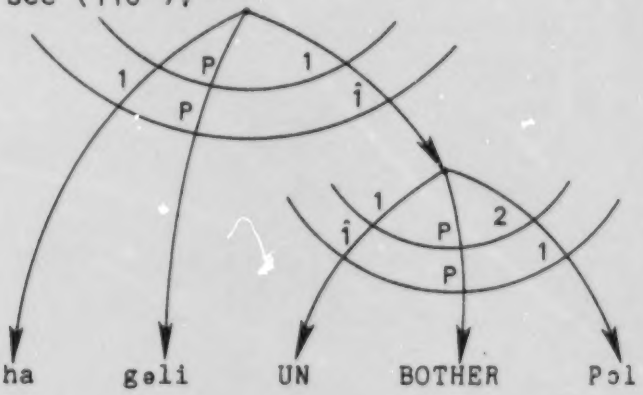
(115) há gə̀lí bə̀-hùm ku Pɔ́l
DUMMY hard AUX-take mouth Paul
'it's hard to bother Paul'

(116) há gə̀lí Pɔ́l bə̀-hùm-hùm ku
DUMMY hard Paul AUX:m-take-REDUP mouth
'it's hard for Paul to be bothered'

(117) há gə̀lí Sara də̀-hùm-hùm ku
DUMMY hard Sara AUX:f-take-REDUP mouth
'it's hard for Sarah to be bothered'

Evidently, Kera does not allow clauses as final 1, at least not with the matrix predicate in (115) and (116). Instead, a dummy **há** is final 1,[14] putting the downstairs clause en chômage; see (116'),[15]

(116')

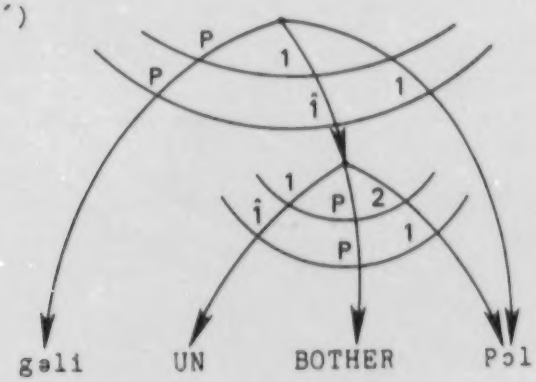


In (118), which I analyze as a case of 1 ascension, the downstairs clause is passive and Paul is an ascendee in the matrix clause and hence the final upstairs 1.

(118) Pɔ́l gèlí bə̀-hùm-hùm ku
Paul hard AUX-take-REDUP mouth
Lit: 'Paul is hard to be bothered'

So this is not a case of a downstairs final 2 ascending upstairs, since by comparing (118) with (113) and (115) we see that the downstairs verb in (118) has passive morphology.[16] (The stratal diagram for (118) is below.)

(118')



Ascension of a final downstairs 2 is possible, but only with **há** apparently putting the ascendee en chômage in the upstairs clause; this is a different use of **há**, and is common in clauses whether or not they involve ascensions. Compare (121), in which **há** appears in a simplex clause.

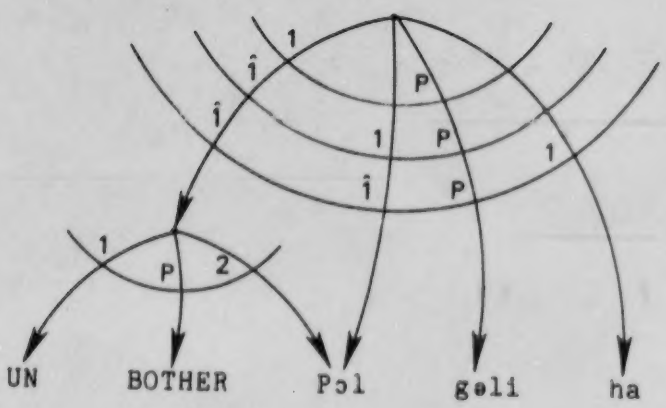
(119) há Pɔ́l gèlí bə̀-hùm ku
DUMMY Paul hard AUX-take mouth
'Paul is hard to bother'

(120) *Pɔ́l gèlí bə̀-hùm ku
Paul hard AUX-take mouth
'Paul is hard to bother'

(121) hã́ hàrgá-ŋ də̀-ay-ə́yé á Máríán
DUMMY goat-DEF AUX-give-REDUP to Marian
'it's the goat that was given to Marian'

In (119) it is clear that it is a downstairs final 2 which is the ascendee, since there is no passive morphology in the downstairs clause. The stratal diagram for (119) is given below.

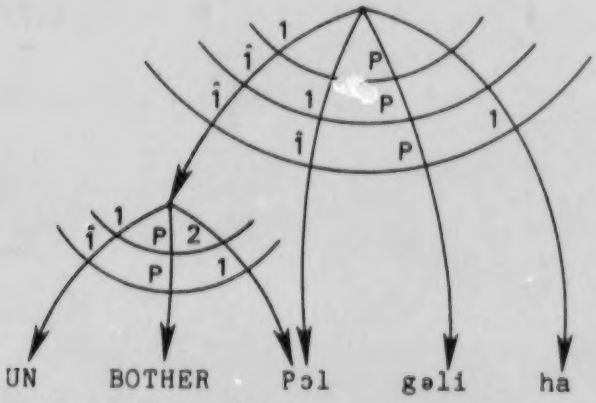
(119′)



It is interesting to note that in the case of 1 ascension to an upstairs 1, as in (118), dummy-insertion is not sanctioned, though it is in the case of 2 ascension as was seen above in (119). (122), which would involve a dummy putting the final 1 of (118) en chômage, is ungrammatical. It is diagrammed in (122′).

(122) *há Pól gèlí bè-hùm-hùm ku
DUMMY Paul hard AUX-take-REDUP mouth
′it′s Paul (that was) hard to bother′

(122′)



Based on the above data, we can suggest the following constraints on "tough" constructions as hypotheses which need to be tested further.

(a) Only a nominal which heads an initial 2 arc can ascend
(b) The final upstairs 1 must be either the final downstairs 1 or the dummy **há**.

These constraints are based on very limited data. Additional research is needed to determine whether there can be a specified initial 1 downstairs, as in test sentence (123), and if so, if it could be an ascendee in the matrix clause, with or without dummy-insertion, as in (124).[17] To decide on the final form of hypothesis (a) above, one must test whether "tough" ascension is limited to initial 2′s, as in

the data in my possession, or whether initial 3's and obliques in downstairs clauses are also candidates for ascension, either as final 3's, as in (126), or final 1's, as in (127), with or without dummy-insertion. (The question mark indicates that I do not know if a sentence is grammatical or not, not having tested it.)

(123) ? há gèlí Jɔ bə̀-hùm ku Pól
DUMMY hard John AUX-take mouth Paul
'it's hard that John bothers Paul'

(124) ? (há) Jɔ gèlí bə̀-hùm ku
(DUMMY) John hard AUX-take mouth
'John is hard to bother Paul'

(125) ? há gèlí bə̀-ay sɔ́-ŋ(-a)
DUMMY hard AUX-give food-DEF(-PROG)
á hə̀lgɔ́-ŋ
to woman-DEF
'it's hard to give the food to the woman'

(126) ? (há) hə̀lgɔ́-ŋ gèlí bə̀-ay sɔ́-ŋ(-a)
(DUMMY) woman-DEF hard AUX-give food-DEF(-PROG)
'the woman is hard to give food to'

(127) ? (há) hə̀lgɔ́-ŋ gèlí bə̀-ay-áyé sɔ́-ŋ
(DUMMY) woman-DEF hard AUX-give-REDUP food-DEF
'the woman is hard to be given food'

7.3 Ascensions and unaccusatives

We can make use of the apparent constraints (a) and (b) on "tough" ascensions to provide evidence for Unaccusative Advancement (UA). (See chapter 6 for more complete discussion of Unaccusative Advancement.) Consider the following sentences:

(128) ten bə-wáté ku Kérá
I AUX-say mouth Kera
'I am speaking Kera'

(129) ku Kérá-ŋ bə-wáté Kupor-a
mouth Kera-DEF AUX-say Kupor-LOC
'Kera is spoken in Kupor'

(130) há gèlí bə-wáté ku Kérá
DUMMY hard AUX-say mouth Kera
'it's hard to speak Kera'

(131) ku Kérá-ŋ gèlí bə-wáté
mouth Kera-DEF hard AUX-say
'Kera is hard to speak'

First of all, note that the verb **wate** 'say' in (129) does not have passive morphology. So this clause is a candidate for UA analysis. In (131), the same clause is embedded under 'hard'. I see three possible ways to analyze (131).

First, since the downstairs verb of (131) does not show passive morphology, this could be a case of downstairs final 2 ascension. However, looking back at what we saw in (119) and (122), this cannot be, since dummy insertion is necessary in the case of 2 ascension. So we rule out this analysis in which **ku Kera** is final 2 of 'say'.

Second, if we assume that **ku Kera** is both an initial and final downstairs subject in (131), (i.e., that this is not a case of Unaccusative Advancement), then we would be forced to revise part (a) of the tentative "tough" ascension constraint (see section 7.2) since we said there that only **initial** 2's can ascend.[18]

Third, if we assume that UA holds, then both constraints (a) and (b) on "tough" constructions are supported.

So if our constraints on "tough" ascensions are correct, they support the UA analysis of the downstairs clause in sentences such as (131), and by extension support the UA analysis of such clauses when they are not embedded (as in (129)).

8 Possessor ascension

According to Frantz (1981), there are two types of Possessor Ascension (PA). "In the first type, the ascended possessor takes on the relation of its host, putting the host en chômage. In the second type of possessor ascension, the ascendee is a (non-initial) 3 in the clause, so the ascension does not put the host en chômage" (pp. 30-31). Kera exhibits both types of PA. But before discussing them, I present Kera possessive constructions which do not involve ascensions.

8.1 The possessive construction in Kera

There are two possessive constructions in Kera, one for inalienably possessed nouns and one for others. For inalienably possessed objects (body parts or kinship terms), the NP is of the form:

noun + possessor (+ def)

as in (132a) and (133a). If the possessor is a pronoun, it is fused into the head noun, as in (132b) and (133b):

(132) a. cər Sara
head Sara
'Sara's head'

b. cə́r-ə́
head-her
'her head'

(133) a. mar Jɔ
wife John
'John's wife'

b. mur-ú-ŋ
wife-his-DEF
'his wife'

For other objects the form is:
noun + kə + possessor (+ DEF)
This construction takes the strong pronouns, as in (134b) and (135b), which do not cliticize. (136) is a list of the strong possessive pronouns in Kera.

(134) a. hàrgá kə́ Jɔ
goat of John
'John's goat'

b. hàrgá nuutú-ŋ
goat his-DEF
'his goat'

(135) a. kul kə́ Sara
house of Sara
'Sara's house'

b. kul naatá
house her
'her house'

(136)

my	nín, kátán
your:masculine	nəmtí
your:feminine	niití
his	nuutú
her	naatá
our:inclusive	náŋ
our:exclusive	náré
your:plural	nəətí
their	neeté

8.2 Possessor ascension to 2

The first type of PA is illustrated in (138) below; compare (137) where there is no PA.[19] (138a') expresses the analysis I am proposing for (138a).

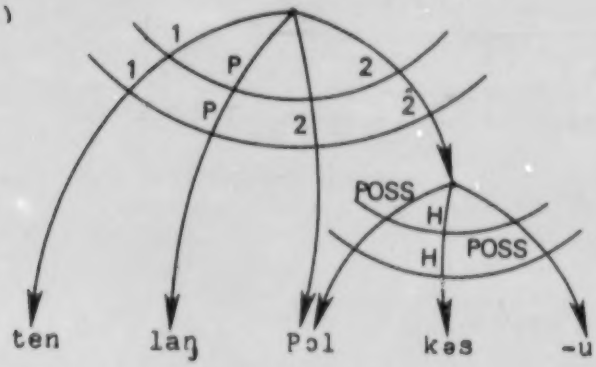
(137) a. ten lá-ŋ kas Pə́l
I hit-PST arm Paul
'I hit Paul's arm'

b. ten lé kas Pól-yaŋ
I hit arm Paul-FUT
'I will hit Paul's arm'

(138) a. ten lá-ŋ Pól kə́s-ú
I hit-PST Paul arm-his
'I hit Paul (on) his arm'

b. ten lé Pól-yaŋ kə́s-ú
I hit Paul-FUT arm-his
'I will hit Paul (on) his arm'

(138a')



Tense cliticization and fused direct object pronouns provide evidence for the final relations of the two sentences above. In (137b), the future tense cliticizes to **kas Pɔl** as final 2. But a comparison of (137b) and (138b), the futures of (137a) and (138a), respectively, indicates that the ascended possessor **Pɔl** is the final 2 in the matrix clause of (138a and b). If this were not a case of PA, we would expect **-yaŋ** to be cliticized to the whole NP, as in (139), which is ungrammatical. The possessor also has the immediate post-verbal position of a final 2 in the matrix clause of (138a and b). In sentence (140) we see that it is the possessor and not the possessed noun which is replaced by a fused direct object pronoun. This is another indication that (138a and b) are cases of PA, since if the possessor is realized as the fused direct object pronoun, it must be a final 2.

(139) *ten lé Pól kə́s-u-yaŋ
I hit Paul arm-his-FUT
'I will hit Paul (on) his arm'

(140) ten lə́-n-ú kə́s-ú
I hit-PST-3sgm.d.o. arm-his
'I hit him (on) his arm'

We notice, too, that in cases of PA, there is a possessive pronoun fused to the nominal. In some languages,

the possessor arc in the NP is erased when the possessor ascends; yet in Kera there seems to be a constraint that in cases of PA there must be some indication that the head noun is possessed. We can posit that the Poss relation to the head noun is not erased when the Poss ascends, meaning that the ascendee is multiattached; it heads a 2-arc in the clause and a Poss arc in the chômeured NP. It is then natural to expect that a pronoun replacer "picks up" one of the multiple relations. (We have already seen Pro-Replacement in other cases of multiattachment section 5.1 .)

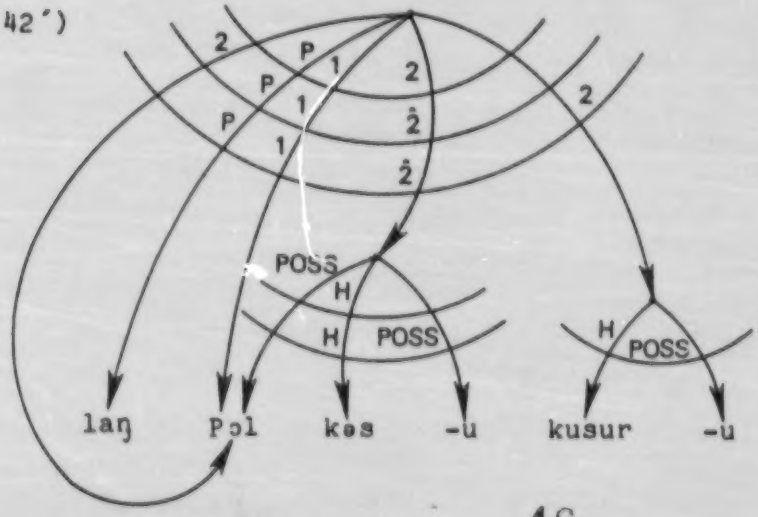
If (138) involves PA, then we might expect that there could be a corresponding form with the ascendee (a 2) as final 1 of a passive; this would give (141). However, (141) is not grammatical.

(141) *Pól bə-lá-lé kə́s-ú
Paul AUX-hit-REDUP arm-his
'Paul was hit (on) his arm'

This fact must be accounted for. I propose the constraint for Kera that an ascended possessor cannot head a final 1 arc. I will call this the Ascended Possessor Constraint (APC). This accounts for the ungrammaticality of (141). It also accurately predicts that there can be no PA in cases that would lead to reflexives such as (142), because in an RG account of such a sentence, 'Paul' would head both the 1 arc and the ascendee arc, as in (142'). (**kusur**, literally 'body', is the form used in reflexive constructions in Kera as head of a replacer arc to resolve multiattachments in which one nominal heads both 1 and 2 arcs in a single stratum.)

(142) *Pól lá-ŋ kusur-u-ŋ kə́s-ú
Paul hit-PST body-his-DEF arm-his
'Paul hit his own arm'

(142')



The APC also predicts that there could be no PA with a 1 host. So a sentence like (143), 'Paul's hair is white' would be ungrammatical with PA, since the ascended possessor would head a final 1 arc. Though I have not actually tested (143) or similar sentences, I can say that I have found no examples that suggest that PA with a 1-host is possible and I expect that (143) would be rejected by native speakers. We will see later in this section that this constraint (APC) comes into play elsewhere, as well.

(143) ? Pól gìbìrwí cúr-ú
Paul white head-his
'Paul's hair is white'
(Lit: 'Paul is white his hair')

In the examples of optional PA considered so far, the head of the initial 2 is a body part and the possessor is a noun. However, if the possessor is a pronoun, PA in such sentences is necessary; so (144), which does not involve PA, is bad.

(144) *ten lá-ŋ kés-ú
I hit-PST arm-his
'I hit his arm'

However, with a verb like 'see' where the predication does not affect the 2, PA to 2 is not allowed, as shown in (145b).

(145) a. ten ásá-ŋ cərə Pól
I see-PST head Paul
'I saw Paul's head'

b. *ten ásá-ŋ Pól cúr-u
I saw-PST Paul head-his
'I saw Paul's head'

8.3 Possessor ascension to 3

There is evidently the other type of PA in Kera also, in which the possessor ascends to 3. These cases do not require that the 2 be directly affected and they usually involve head nouns which are either kinship terms or alienable objects. Sentences (146) and (147) do not involve PA, while (148) and (149) are the corresponding sentences which I suggest involve PA to 3. I propose (148') as the diagram for (148).

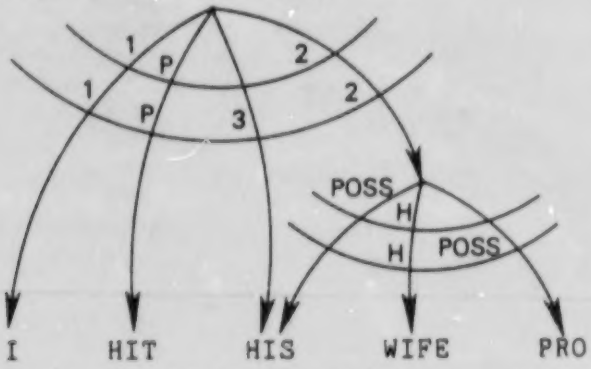
(146) ten lá-ŋ mar Pól
I hit-PST wife Paul
'I hit Paul's wife'

(147) yə gè kuli kə́ Pə́l
they build house of Paul
'they build Paul's house'

(148) ten lə-n-u mur-ú-ŋ
I hit-PST-3sgm.i.o. wife-his-DEF
'I hit his wife'

(149) yə gà-w kuli nuutú-ŋ
they build-3sgm.i.o. house his-def
'they build his house'

(148')



In (148) and (149), it is an **indirect** object pronoun that has been fused to the verb (compare (140) and (148), recalling that tone distinguishes direct object clitics from indirect object clitics).

Also, using the test of tense cliticization, we see in (150) that **-yaŋ** is cliticized to the head noun as the final 2.[20] If these were cases of PA to 2, the head noun would be a 2-Cho and we have already seen a constraint against cliticization to a 2-Cho (see section 4.2).

(150) ten lə-n-u mur-ú-ŋ-yaŋ
I hit-PST-3sgm.i.o. wife-his-def-FUT
'I hit his wife'
(More lit:'I hit to him his wife')

This analysis of PA to 3, in conjunction with previous constraints, accurately predicts the ungrammaticality of sentences like (151) and (152).

(151) *ten lá-ŋ Pə́l mur-ú-ŋ
I hit-PST Paul wife-his-DEF
'I hit Paul's wife'

(152) *Pə́l bə-lá-lé mur-ú-ŋ
Paul AUX-hit-REDUP wife-his-DEF
'Paul was hit his wife'

(151) violates the constraint against 3-2 without 2-1 (see

section 4.2). But the ascendee cannot be a final 1 by the APC constraint given earlier in this section which states that an ascended possessor cannot head a final 1 arc, so (152) is ungrammatical.[21]

I should point out that all of the putative PA to 3 examples are open to analysis as involving initial Ben's as final 3. However, these constructions can be used to describe events which are far from beneficial to the possessor.

As in cases of PA to 2, the APC constraint against ascendees heading a final 1 arc predicts that PA which results in a reflexive structure such as (153) would not be possible (though I have not tested (153)), since the initial 1 is also the possessor. We have seen that corresponding examples are ungrammatical in cases of PA to 2 (see (142)). I do know that (154), which does not involve PA, is a correct way of saying 'Paul hit his own wife'.

(153) ? Pól lá-ŋ kusur-u-ŋ mur-u
Paul hit-PST body-his-DEF wife-his
'Paul hit his own wife'

(154) Pól lá-ŋ mur-u
Paul hit-pst wife-his
'Paul hit his own wife'

As in cases of PA to 2, the possessor arc in the NP does not erase and there is a pronoun replacer to resolve the multiattachment.

8.4 Summary

Kera allows both PA to 2 and PA to 3. PA to 2 is possible when the head noun is a body part and there is some action which directly affects the Possessor; if these conditions are met and the possessor is a pronoun, then PA is necessary. PA to 3 is possible when the possessed noun is a kinship term or an alienable object. Kera does not permit an ascended possessor to head a final 1 arc. I have called this constraint the Ascended Possessor Constraint.

Notes

1. We could just as well say that there is no copula in the simple present tense and that the helping verb **ji** is required to support the tense clitics. I will not pursue this question further at this time, as it appears moot for purposes of this thesis.

2. Optionally, the progressive form (see (6)) can also have a reduplicated stem, in which case it will be formally identical to the passive. However, in most cases semantic likelihood determines whether such a form is recognized as progressive or passive, for usually one or the other interpretation will be semantically anomalous. Tenses for progressive are formed in the same way as for stative and passive. The glosses in this thesis for all such examples, as either active or passive, was determined by translations provided by native speakers.

3. I am not sure why two of these have variant forms, but I think it may have to do with discourse factors.

4. Since cliticization of the direct object pronoun suffix results in changes in the verb stem and in the tone on the verb, I have chosen in this paper to refer to this as fusion, rather than cliticization. This should also help prevent confusion between this type of cliticization and tense cliticization.

5. This **-a** suffix distinguishes locative forms from the genitive forms which do not have this suffix, such as **kas walgaŋ** (literally 'fear's hand') in (33).

6. In cases of intransitive verbs with unspecified initial 1, the same form **ye** 'they' is used.

7. The stratal diagram assumes that **he** is coreferential with **John**. The diagram would be different if it were not.

8. There is the possibility that the prefix auxiliary **be-** is not an invariable form of the auxiliary, but simply an infinitive marker. If so, then the Equi-Erasure requires the infinitive, as it does in many other languages.

9. Actually, Ebert lists 13 verbs, but in working with native speakers I have found that two of the verbs listed, **gaa** and **vaa**, are actually the singular and plural forms of one verb. The plurals she lists for these two are, according to my research, not the regular plurals but iterative verb forms. So I have changed the listing to conform to the data I have been given by the native speakers I worked with.

10. Unfortunately, I have elicited similar causative examples from different speakers than those who provided (84) and (85), and these other speakers do make use of the plural form of 'cause' with a plural final 2. It is not clear which of three possible parameters is involved in this variation. The difference may be as to whether hypothesis 1 or hypothesis 3 is correct for the grammars of different speakers. Or it may be differences in "analyses" by speakers of the causative construction; for some speakers 'cause' may govern ascensions, while for other speakers it is like English **force** in requiring that the downstairs initial 1 also be the upstairs initial 2. (See section 7.1.) Or perhaps some speakers have two verbs **gaa** in their grammars, one meaning 'send' which shows stem agreement, and another meaning 'cause' which does not.

11. This will lead us below to consider an analysis of the 'cause' examples (101a and b) such that the final 2 ('boy') is also the initial 2; i.e., that these are not ascension but "equi" structures.

12. As indicated in note 10 of chapter 6, since not all speakers show lack of stem agreement in sentences such as (84), this discussion pertains only to grammars for those who do.

13. Perlmutter and Postal (1984b) propose that intransitive predicates governing ascensions universally determine unaccusative initial strata (p. 153). If correct, this means that the host clause for the ascensions dealt with in this section are initial 2's of the matrix clause, and the dummy ñnha (see below) most likely is a 2 in its entry stratum.

14. Since there is no overt final subject in (115), the **be-** is invariable.

15. Similar constructions in other languages are often referred to as Extraposition, due to the consequent position of the clause which has been put en chômage.

16. It is interesting to note that in cases of so-called Tough Movement in other languages, it is usually a ds 2 which is the ascendee and not a 1. With this type of construction in Kera, though the ascendee is not the final ds 2, it **is** the **initial** ds 2.

17. Since I do not have access to a speaker of Kera at this time, I offer (123)-(127) as test sentences.

18. If the initial downstairs relation of **ku Kera** in (131) is the same as the final downstairs relation, i.e., an

initial and final 1, then we expect that dummy-insertion is not possible in (131) since in (118), when the final downstairs 1 was the ascendee, dummy-insertion was not possible (compare (122)). However, I have not tested for this possibility. The UA analysis also predicts that dummy-insertion will not be grammatical. So both the second and third possible analyses predict that the following sentence will be bad:

(a) ? há ku Kérá-ŋ gèlí bə-wáté
DUMMY mouth Kera-DEF hard AUX-say
'it's Kera that's hard to speak'

19. Both of these are grammatical, but there is a slight difference in meaning. (138a) seems to be used when the speaker is focussing on the effect of the action upon the possessor. (137a) is more likely to be used if Paul's arm is extended away from his body and the blow is to prevent him from carrying out a certain action with his hand or arm. (138a) might be used when his arm is at his side when he is hit, so that the action is perceived as being directed against him personally and not just part of his body.

20. (150) is not a sentence that I elicited, but it is based on similar sentences with predicates 'bite' (which sanctions PA to 2) and 'break' (which sanctions PA to 3). The latter sentences (b) and (c) are presented here, but I do not have the tone for them, so did not include them in the main part of the paper. I would assume that the tone on them would reflect the difference between direct object and indirect object. Note that there is a difference in where the future suffix **-yaŋ** cliticizes. In (b), since this is PA to 2, **kəsu** is the 2-Chô, so **-yaŋ** cannot cliticize to it. In (c), a case of PA to 3, **kəsu** is the final 2, so **-yaŋ** does cliticize to it.

(b) ten hə-w-yaŋ kəs-u
I bite-3sgm.d.o.-FUT arm-his
'I will bite his arm'

(c) ten hə-w kəs-u-yaŋ
I break-3sgm.i.o. arm-his-FUT
'I will break his arm'

21. Missing in my data are examples of PA to 3, in which the possessor is a noun. It would be helpful to test sentences (d) and (e), presented below. I am quite sure they are grammatical, but I would think that the meaning would be taken to be Benefactive because of 3's and Ben's having the same marking.

(d) ? ten lá-ŋ mur-ú-ŋ á Pól
I hit-PST wife-his-DEF to Paul
'I hit his wife (for Paul?)'

(e) ? ten lá-ŋ mur-ú-ŋ á nunu
I hit-PST wife-his-DEF to him
'I hit his wife (for him?)'

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CLITIC DOUBLING AND M-CHAINS IN PIRAHÃ*

by

Dan Everett

1 Introduction
2 A sketch of Pirahã surface syntax
  2.1 Verb morphology
  2.2 Phrase structure
  2.3 Intrasentential reference
3 The theoretical framework
4 Towards an analysis of intrasentential reference in Pirahã
  4.1 A failed analysis
  4.2 An analysis of clitic doubling in Pirahã
    4.2.1 A note on the nature of clitics
    4.2.2 Clitics, ECs and M-chains in Pirahã
Appendix: Clitics, pronouns and affixes

1 Introduction

Recent studies of syntax have shown clitics to be a rich source of insights into a variety of principles governing the well-formedness of sentences (cf., inter alia, Kayne (1975); Steele, et al. (1981); Jaeggli (1982); Borer (1981); Kaisse (1982)). One particularly interesting focus of discussion continues to be the relationship between pronominal clitics and coreferential NPs in the same clause, so called **clitic doubling** constructions, as in (1) (from River Plate Spanish, Chomsky (1981:277)):

(1) Lo$_i$ vimos a Juan$_i$.[1]
him we:saw to John
'We saw John.'

At least two points of consensus have been reached by studies on clitic doubling in the **Government and Binding Theory** (henceforth GBT) of Chomsky (1981; 1982). These are : (i) the basic properties of this phenomenon are derivable from the **subtheories** of **Case, government, thematic (θ) roles**, and **binding** and, closely related to this, (ii) clitic doubling is possible only when a special **Case assigner** appears to attribute Case to the **doubled NP**, since clitics "absorb" Case.[2]

The present paper may be seen as a contribution to this general discussion to the degree that we are able to establish that while the basic properties of clitic doubling in Pirahã are indeed derivable from subtheories of GBT, additional principles are required to explain why languages such as Pirahã can allow clitic doubling without a special Case assigner. The basic facts to be dealt with in this

regard are found in (2)-(4) below. In (2) we see for example that Pirahã pronominals are not distinguished morphologically between reflexives and nonreflexives or, alternatively, that they are free in reference when no doubled NP is present. (3) and (4) show that these pronominals may cooccur with subject and/or object NPs in which case they are obligatorily coreferential with the doubled NP. See the next section for additional data.

(2) a. $hi_{(i)}$ $hi_{(i/j)}$ xib -áo -b -á
3 3 hit -telic -perf -rem
(i) 'He hit himself.':u3
(ii) 'He hit him.'

b. $ti_{(i)}$ $ti_{(i)}$ xibáobá
1 1 hit
'I hit myself.'

c. $gí_{(i)}$ $gí_{(i)}$ xibáobá
2 2 hit
'You hit yourself.'

Pseudo-topicalization

(3) a. kohibiíhai$_{(i)}$ $hi_{(i)}$ $ti_{(j)}$ xibáobá
kohoibiíhai 3 1 hit
'Kohoibiíhai hit me.'

b. kohoibiíhai$_{(i)}$ $hi_{(i)}$ $gí_{(j)}$ xibáobá
kohoibiíhai 3 2 hit
'Kohoibiíhai hit you.'

c. kohoibiíhai$_{(i)}$ $hi_{(i)}$ $hi_{(i/j)}$ xibáobá
kohoibiíhai 3 3 hit
(i) 'Kohoibiíhai hit himself.'
(ii) 'Kohoibiíhai hit him.'

Complex reference

(4) a. kohoibiíhai$_{(i)}$ $hi_{(i)}$ xabagi$_{(j)}$ $hi_{(j)}$
koibiíhai 3 xabagi 3

xibáobá
hit

'Kohoibiíhai hit Xabagi.'

b. kohoibiíhai$_{(i)}$ xabagi$_{(j)}$ $hi_{(i)}$ $hi_{(j)}$
Kohoihiíhai Xabagi 3 3

xibáobá
hit

'Kohoihiíhai hit Xabagi.'

We will have more to say about these examples in subsequent sections. Further, we will suggest that the analysis of clitic configurations in Pirahã offers important new insights into parameters governing clitic configurations in **Universal Grammar** (UG).

The discussion is organized as follows. First, a basic sketch of Pirahã surface syntax is provided, focussing especially on intrasentential reference configurations such as those exemplified by (2)-(4) above. This is followed by a brief introduction to the relevant principles of GBT. Next, we propose an analysis of clitic configurations in Pirahã based on the notion of **M-chains**, by which, it is argued, clitics in languages like Pirahã transmit Case, θ roles, and other features to their doubled NPs. In the last section the predictions of this idea are tested with regard to Pirahã and shown to be superior to those of other recent analyses of clitics. Finally, an appendix is added in which we speculate on the implications of this analysis for the understanding of how clitics relate to the development of verbal affixes.

2 A sketch of Pirahã surface syntax

2.1 Verb morphology

It is worth noting here that Pirahã verbs lack two basic features relatively common to verbs in general, namely, they are not marked for either tense or agreement. Thus, in example (2) above, the verb form is constant for 1, 2, or 3 person. Consider as further evidence of this, (5) and (6) below.

(5) a. xipóihi baóhoipaí koho -ái -p -i -haí
woman ocelot eat -atelic -imp -prox -relcert
'The woman is/will shortly be/just was eating the ocelot.'

b. baóhoipaí xipóihi kohoáipihaí
'The ocelot is/will shortly be/just was eating the woman.'

(6) a. hi soxóá kahá -p -i -í
3 already go -imp -prox -compcert
'He already left/is going.'

b. ti soxóá kahápií
1 already go-imp-prox-compcert
'I already left/am going.'

The temporal ambiguity or vagueness of such examples is resolved mainly through context (although some aspectual combinations such as **telic + perfective** force a particular (in this case past)

interpretation. Time words do not offer much help since they are equally ambiguous, e.g. **xahoapió** 'another day' (used either as 'yesterday', 'tomorrow', or 'some other day') and **soxógiái** 'big time' (i.e. 'a long time ago' or 'a long time from now in the future'). We have more to say on agreement in Pirahã in Sect.4, suggesting that clitics fulfill this function.

Pirahã verbs are richly inflected for aspectual distinctions. In Everett (to appear), some sixteen classes of verbal suffixes are listed, with over thirty distinct aspects and moods. However, we will not go into this system here, since it has little bearing on the present analysis (although, as is mentioned in subsequent discussion, perhaps aspect is best analyzed as generated directly on the verb, rather than in what GBT normally considers to be the position of inflection).

2.2 Phrase structure

In Everett (to appear), we argue that basic word order in Pirahã is SOV. This conclusion is based primarily on (i) frequency of this order in relation to other observed configurations and (ii) the importance of word order to the interpretation of grammatical relations. It is also noted that phrase structure in Pirahã shows features common to OV languages, such as postpositions and genitive-head noun orders. To illustrate the relation between word order and grammatical relations, consider the following examples:[4]

(7) a. kohoibiíhai kapí xiti -baí
kohoibiíhai coffee drink -int
'Kohoibiíhai drinks a lot of coffee.'

b.* kapí kohoibiíhai xitibaí
* 'Coffee drinks a lot of kohoibiíhai.'

(8) a. baíxi xigagaisi xogió kai -p -á -há
father God all make -imp -rem -compcert
'Father God made everything.'

b.* xogió baíxi xigagaisi kaipáhá
* 'everything made God'

Implications of other deviations from SOV order are discussed later in this section and Sect. 4. (9) and (10) illustrate intransitive clauses.

(9) páxaihi xisáxoi -baí
rooster crow -int
'The rooster crows a lot.'

(10) xogihíai kaob -í
star fall -prox
'The star falls.'

Although a large number of other constituents and structures might be exemplified, here we mention only the set of categories which occur in the syntactic **oblique** position. This node is, in linear terms, the third position rightward in the sentence, following subject and subject clitic positions. Alternatively, it is the first node dominated by VP. Elements occuring in this position (except for proper nouns and a few other isolated cases) are marked by the suffix -o 'oblique' (cf. Everett (to appear) for more argumentation and exemplification). Elements occuring in this position include indirect objects, postpositional phrases, comitatives, and adverbial expressions as in (12)-(16), respectively,

(12) xoii tabó ap-ó xítixisi xihi-a-há
xoii board head(prep)-obl fish put-rem-compcert
'Xoii put the fish on top of the table.'

(13) kaioá xahaigí xigí -o xopí -itar -há
kaioá brother with -obl go -iter -compcert
'Kaioá left with (his) brother.'

(14) hoagaixóxai pí -o kahá -p -í
hoagaixóxai also -obl go -imp -prox
'Hoagaixóxai left also.'

(15) hiaitíihí xahoigí -o xísa -xop -í
Pirahã evening -obl sing -go -prox
'(the) Pirahã go sing (in) (the) evening'

(16) kagáihiaí báihiigí baaí koab -ái -p -í
jaguar slowly wild pig kill -atelic -imp -prox
'The jaguar slowly kills the wild pig.'

One further point of interest for the present discussion is that Pirahã verbs may appear without their full complement of arguments, as in (16) and (17):

(17) speaker A: hi kao xítiixisi kaoap -áp -í
3 inter fish hook -punc -prox
'Did he catch any fish?'

speaker B: soxóá kaoapápi
already
'(He) already caught (some fish).'

(18) kahá -p -i -hiab -iig -á
go -imp -ep -neg -cont -rem
'(He) hasn't gone yet.'

This fact about Pirahá sentence structure will be of relevance to the discussion in the fourth section. The property of allowing fewer (overt) arguments than called for by the lexicon is known as the **pro-drop** parameter.[5] More on this is given in subsequent discussion.

The basic structure of noun phrases is: (Genitive) - Head - (Modifier) - (Determiner), as in (19) and (20).

(19) baíxi kaiíi
parent house
'father's/mother's house'

(20) xoogiái sitaí biísai gáihi
xoogiái feather red that
'That red feather of Xoogiái.'

Thus, we may sum up our brief survey of Pirahã phrase structure by the following rules:

(21) a. $S \longrightarrow N''' \text{ -INFL } - V''$
b. $V'' \longrightarrow \left\{ \begin{matrix} N''' \\ P'' \\ \text{Particle} \\ \text{Adv} \end{matrix} \right\} \text{ -V}'$
c. $V' \longrightarrow (N''')$ -V
d. $N''' \longrightarrow N''$ - (Det)
e. $N'' \longrightarrow N'$ - (Mod)
f. $N' \longrightarrow (N''')$ - N

2.3 Intrasentential reference

To understand reference in Pirahã, we must first say a few words about the pronoun system. As will become clear in the course of this paper, Pirahã pronominals include both **pronouns** in the usual sense of the word, and **clitics** (cf. Kayne (1975), Borer (1981) and Sect. 4.2.1 below). Since the notion of clitics relies, however, on the analysis of these elements in GBT, we will therefore continue to use the more neutral term **pronominal**, here.

Let us consider first the simplicity of this system:[6]

(22) a. **ti** 'first person singular'
b. **gí(xai)** 'second person singular'
c. **hi(apióxiai)** 'third person singular/non-definite'
d. **gói** 'second person singular imperative'
e. **kaxáo** 'first person plural hortatory'
f. **xogiágaó** 'everyone'

The information in parentheses appears only in the phonological free form of the pronominal. (22d-f) only have free forms. Note that, with the exception of (22e) and (22f), these are all singular (cf. note 6). In fact, the only way to express plurality other than in these forms is periphrastically as in (23).

(23) a. ti gíxai pí -o kahá -p -í
1 2 also -obl go -imp -prox
'I and You go/We go.'

b. gíxai hi pío kahápí
2 3
'You and he go/You(pl) go.'

To keep the facts clear, this section is divided into three groups of phenomena (as in the introduction to this paper), labelled **reflexives**, **pseudotopicalization**, and **complex reference**, respectively.

Reflexives

(24) $hi_{3(i)}$ $hi_{3(i/j)}$ xib -áo -b -á
hit -telic -per -rem
(i) 'He hit himself.'
(ii) 'He hit him.'

(25) $gí_{2(i)}$ $gí_{2(i)}$ xibáobá
'You hit yourself.

(26) $ti_{1(i)}$ $ti_{1(i)}$ xibáobá
'I hit myself."

As was mentioned earlier, the verb form in these examples remains constant, since Pirahã verbs are not inflected for person, number, transitivity, reflexivity, etc. These examples might tempt us to conclude hastily that Pirahã merely lacks a morphological distinction between reflexives and nonreflexives. We suggest below, however, that the correct conclusion involves a different perspective on these pronominals and that reflexivity is best understood at a more abstract level of representation and thus is not relevant to the interpretation of these pronominals.

Pseudotopicalization

The examples which follow are superficially similar to, yet fundamentally distinct from, topicalization in Pirahã, (cf. Sect. 4 below). For this reason, they are labelled as pseudotopicalization.

In these (and subsequent) sentences, the value of the subscripted indices are as follows: **j≠i; k** is free (i.e. it may take any antecedent in or outside of the sentence in question).

(27) kohoibiíhai$_{(i)}$ hi$_{(i)}$ ti$_{(j)}$ xibáobá
kohibiíhai $_{3}$ $_{1}$ hit
'Kohoibiíhai hit me.'

(28) kohoibiíhai$_{(i)}$ hi$_{(i)}$ gí$_{(j)}$ xibáobá
'Kohoibiíhai hit you.'

(29) kohoibiíhai$_{(i)}$ hi$_{(i)}$ hi$_{(k)}$ xibáobá
(i) 'Kohoibiíhai hit himself.'
(ii) 'Kohoibiíhai hit him.'

(30) kohoibiíhai$_{(i)}$ hi$_{(i)}$ xabagi$_{(j)}$ xibáobá
'Kohoibiíhai hit Xabagi'

(31) * kohoibiíhai$_{(i)}$ ti$_{(j)}$ hi$_{(k)}$ xibáobá
* 'Kohoibiíhai I hit him/someone.'

(32) * kohoibiíhai$_{(i)}$ gí$_{(j)}$ hi$_{(k)}$ xibáobá
* 'Kohoibiíhai you hit him/someone'.

(33) * Kohoibiíhai$_{(i)}$ hi$_{(j)}$ hi$_{(k)}$ xibáobá
* 'Kohoibiíhai he/someone hit him/someone.'

(34) * Kohoibiíhai$_{(i)}$ hi$_{(j)}$ xabagi$_{(j)}$ xibáobá
* 'Xabagi hit Kohoibiíhai.'

In (27)-(34), the relevant observations are that (a) the leftmost pronominal is obligatorily coreferential with the subject (as is especially clear in the starred examples; cf. also the forced, yet impossible, translation in (34)), (b) the rightmost pronominal is always free in reference (but see the next group of examples). Both occurrences of pronominals are optional, as seen in (35) (cf. also (17) and (18) above).

(35) a. kohoibiíhai xabagi xibáobá
Kohoibiíhai hit Xabagi.'

b. kohoibiíhai xibáobá
(i) 'Kohoibiíhai hit (someone).'
(ii) '(Someone) hit kohoibiíhai.'

c. xibáobá
'(Someone) hit (someone).'

As was mentioned, examples such as (27)-(34) are superficially reminiscent of a topicalization paradigm, as in (36):

(36) a. $\text{John}_{(i)}$ hit { Bill. / $\text{him}_{(j)}$ / $\text{himself}_{(i)}$ }

b. $\text{John}_{(i)}$, $\text{he}_{(i)}$ hit { Bill. / $\text{him}_{(j)}$ / $\text{himself}_{(i)}$ }

*c. $\text{John}_{(i)}$, I hit { Bill. / $\text{him}_{(j)}$ / $\text{himself}_{(i)}$ }

However, as will be shown in Sect. 4, this is not the case at all. Let us turn now to the final set of examples, what we refer to here as complex reference.

Complex reference

(37) a. kohoibiíhai$_{(i)}$ xibáobá hi$_{(i)}$ xabagi$_{(j)}$ hi$_{(j)}$

'Kohoibiíhai hit Xabagi.'

b.* kohoibiíhai$_{(i)}$ xibáobá hi$_{(j)}$ xabagi$_{(j)}$ hi$_{(i)}$

* 'Xabagi hit Kohoibiíhai.'

c.* kohoibiíhai$_{(i)}$ xibáobá hi$_{(k)}$ xabagi$_{(j)}$ hi$_{(k)}$

* 'Kohoibiíhai someone hit Xabagi someone'

The ungrammaticality of (37b) and (37c) is due to the fact that, as in pseudotopicalization, the rightmost pronominal must have as its antecedent the rightmost NP while the leftmost pronominal takes the leftmost NP as its antecedent. A condition violated by the indices in (37b) and in (37c) when $k \neq i/j$.

(38) a. kohoibíhai$_{(i)}$ xabagi$_{(j)}$ hi$_{(i)}$ hi$_{(j)}$
xibáobá

'Kohoibíhai hit Xabagi.'

b.* kohoibíhai$_{(i)}$ xabagi$_{(j)}$ hi$_{(j)}$ hi$_{(i)}$
xibáobá

* 'Xabagi hit Kohoibíhai.'

c.* kohoibíhai$_{(i)}$ xabagi$_{(j)}$ hi$_{(k)}$ hi$_{(k)}$
xibáobá

* 'Kohoibíhai someone hit Xabagi someone.'

The explanation of ungrammaticality in (38b) and (38c) is the same as in (37b) and (37c).

In spite of its apparently greater complexity, (37) represents the most common type of sentence construction, clitic doubling of subject and direct object positions. As opposed to example (29), where the rightmost **hi** '3' is free, the rightmost **hi** '3' in (37) and (38) is obligatorily bound to the rightmost NP and is obligatorily disjoint from all other NPs in the sentence.

Any account of reference in Pirahã must offer a coherent treatment of these three sets of facts (and others which we will introduce below). Specifically, why are the pronominals free when no doubled NP appears yet obligatorily bound/disjoint in the manner shown above when a doubled NP is present? How are the correct referential "links" guaranteed? What is the structure of these examples?

Before proposing what seems to us the most adequate analysis of these facts, let us briefly consider some basic principles of the model we will be working with.

3 The theoretical framework

While GBT is clearly a logical outgrowth of by now familiar research initiated in the late forties and early fifties into the nature of human grammatical capacity, UG, there are some rather fundamental differences between this model and previous versions, such as the well known **Aspects** framework (cf. Newmeyer (1980); Everett (1981)). We shall therefore discuss briefly these differences, concentrating on the areas of immediate relevance to the present study.

As in previous stages of generative grammar, GBT maintains that various grammatical levels and principles interrelate to generate a given sentence. We may diagram the theory as in (39) (cf. Fiengo

(35) a. kohoibiíhai xabagi xibáobá
Kohoibiíhai hit Xabagi.'

b. kohoibiíhai xibáobá
(i) 'Kohoibiíhai hit (someone).'
(ii) '(Someone) hit kohoibiíhai.'

c. xibáobá
'(Someone) hit (someone).'

As was mentioned, examples such as (27)-(34) are superficially reminiscent of a topicalization paradigm, as in (36):

(36) a. $John_{(i)}$ hit { Bill. / $him_{(j)}$ / $himself_{(i)}$ }

b. $John_{(i)}$, $he_{(i)}$ hit { Bill. / $him_{(j)}$ / $himself_{(i)}$ }

*c. $John_{(i)}$, I hit { Bill. / $him_{(j)}$ / $himself_{(i)}$ }

However, as will be shown in Sect. 4, this is not the case at all. Let us turn now to the final set of examples, what we refer to here as complex reference.

Complex reference

(37) a. kohoibiíhai$_{(i)}$ hi$_{(i)}$ xabagi$_{(j)}$ hi$_{(j)}$
xibáobá

'Kohoibiíhai hit Xabagi.'

b.* kohoibiíhai$_{(i)}$ hi$_{(j)}$ xabagi$_{(j)}$ hi$_{(i)}$
xibáobá

* 'Xabagi hit Kohoibiíhai.'

c.* kohoibiíhai$_{(i)}$ hi$_{(k)}$ xabagi$_{(j)}$ hi$_{(k)}$
xibáobá

* 'Kohoibiíhai someone hit Xabagi someone'

The ungrammaticality of (37b) and (37c)is due to the fact that, as in pseudotopicalization, the rightmost pronominal must have as its antecedent the rightmost NP while the leftmost pronominal takes the leftmost NP as its antecedent. A condition violated by the indices in (37b) and in (37c) when $k \neq i/j$.

(38) a. kohoibiíhai$_{(i)}$ xabagi$_{(j)}$ hi$_{(i)}$ hi$_{(j)}$
xibáobá

'Kohoibiíhai hit Xabagi.'

b.* kohoibiíhai$_{(i)}$ xabagi$_{(j)}$ hi$_{(j)}$ hi$_{(i)}$
xibáobá

* 'Xabagi hit Kohoibiíhai.'

c.* kohoibiíhai$_{(i)}$ xabagi$_{(j)}$ hi$_{(k)}$ hi$_{(k)}$
xibáobá

* 'Kohoibiíhai someone hit Xabagi someone.'

The explanation of ungrammaticality in (38b) and (38c) is the same as in (37b) and (37c).

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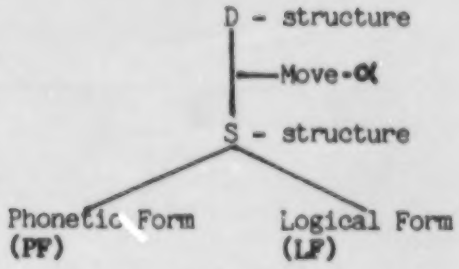
As in previous stages of generative grammar, GBT maintains that various grammatical levels and principles interrelate to generate a given sentence. We may diagram the theory as in (39) (cf. Fiengo

(1980), Chomsky (1981); van Riemsdijk and Williams (1981); and others for more details):

(39)



D-structure is the level at which θ relations (cf. below) such as **agent**, **patient**, etc. are assigned. Its contribution to semantic interpretation beyond this is, in GBT, minimal - a sharp contrast with proposals in Chomsky (1965; 1971).

Move-α represents the transformational component in its entirety, literally allowing any syntactic category to be moved anywhere. Ungrammatical results are ruled out by general principles (cf. below) rather than ad hoc or overly specific structural descriptions for individual rules. Move-α may also apply at PF or LF (cf. Chomsky (1981); May (1977)). Further, categories moved by this rule leave a coindexed **trace** in the position from which they were moved.

S-structure is the interface between PF, LF, and the syntax. It is considerably more abstract than the **surface structures** of previous versions of generative theory since it contains traces and indices left by Move-α as well **empty categories.**

PF, the phonological component, will not concern us here. See Chomsky and Halle (1968); v.d. Hulst and Smith (1982), and others for some proposals.

LF is the linguistic input to interpretation. A clear outline of its basic features may be found in May (1977) and Chomsky (1981). We return to LF in the final section, as we test our analysis' predictions with regard to the effect of clitics on movement and interpretation in Pirahã.

The relations between the components of (39) are of two different types. First, the components are related in terms of input and output of rules - the **rule perspective.** Second, each sentence generated in (39) must comply with general conditions on well-formedness - the **systems/principles perspective.**

Although the nature of rules (morphological, syntactic, logical or phonological) continues to be an important topic of research in GBT, this second perspective which "... focuses on principles that

hold of rules and representations..." (Chomsky (1982:4ff)), might be fairly said to be the one that is most interesting as a source of insights into UG in current investigations. Those principles which will most concern us here are:

(40) **Government Theory:**
This is the pivotal system or subtheory in GBT, from which properties of most other systems are (at least in part) derivable. The basic intuition is that a lexical category (noun, verb, preposition, etc.) governs its complements. While there are many formal definitions of government in the literature, we will adopt the proposal of Chomsky (1982:19), although nothing crucial depends on this: 7

(41) "α governs β if $\alpha = X^0$ (in the sense of X-bar theory), α c-commands β, and β is not protected by a maximal projection."

A central notion in government theory is the **ECP (empty category principle)** which requires all empty categories except **PRO** (cf. below) to be governed.[8] next section.

(42) **Case theory**: The principal intuition here is that there exist configurational and/or lexical requirements between nouns and the heads of phrases in which they occur which obligate these nouns or their traces to receive a syntactic Case (e.g. nominative, objective, etc.). These requirements are responsible for the **Case filter** which states that "... every NP with phonological content must receive Case." (Chomsky (1982:6)).

For example, consider (43):

(43) * $\text{Who}_{(i)}$ was hit Bill by $t_{(i)}$?

Among other problems in (43) is the fact that with **who** (or its trace) in subject position **Bill** is forced to remain in object position. But it is well known that passive verb forms do not assign Case to their objects. Normally, this would be remedied by raising **Bill** to subject position where it would receive nominative Case. Since the presence of **who** in (43) prohibts this, the Case filter is violated and the sentence is ungrammatical

(44) **Theta (θ) theory**: The idea here is that predicates assign **thematic (θ) roles** to their arguments. The heart of the theory is:

the **θ-criterion**:

(45) (i) Every θ role must be assigned to (just) one argument.
(ii) Every argument must be assigned (just) one θ role.

To see how this works, consider (46):

(46) a. John$_{(i)}$ was hit $t_{(i)}$ by Bill.

b.* John$_{(i)}$ was hit Bill$_{(j)}$ by $t_{(j)}$.

Since both **John** and **Bill** receive Case in (46), (**John** as subject, **Bill** through its trace), the problem of (46b) cannot be ascribed to Case theory. Now note that **Bill** receives the θ role 'patient' from **hit** (and, arguably, the 'agent' role from **by**), while **John** receives no θ role, since passives assign no θ role to their subjects. Thus the θ-criterion is violated twice - by **John** as an argument with no θ role and **Bill** as an argument with two θ roles.

(47) **Binding theory**: Binding involves the relations between referentially dependent terms to their antecedents.

These dependent terms are of two kinds: (i) **anaphors**, those elements which have no inherent reference, requiring an antecedent in the immediate linguistic context (their **governing category**, cf. note 9 below); (ii) **pronouns**, dependent terms which may **not** have an antecedent in the immediate linguistic context, although they may take antecedents outside of this context. This subtheory reduces to two basic principles:

A. An anaphor is bound in its governing category.[9]

B. A pronominal is free in its governing category.

A fuller typology of nominal categories (lexical and empty) is found below. These four sets of principles are central notions of GBT and crucial to the present study (cf. Chomsky (1981; 1982). Let us turn now to consider the concept and typology of empty categories in GBT.

The basic motivations behind the investigation of empty categories (ecs) are that: first, there exists clear evidence that **gaps** occur in the syntax where a syntactic category might have been expected to occur, as in (48)-(51):

(48) Who did you see _____ ?

(49) John was hurt _____.

(50) Mary convinced her friend _____ to go to church.

(51) Mas, quando ___ chegou, todos ficaram aliviados.
but, when arrived, all became relieved
'But when ((s)he) arrived, everyone was relieved.'

The second motivating factor is that these **ecs** have various properties with fundamental implications for the grammar as a whole.

Chomsky (1982:78) has proposed the following typology of the **ecs**;[10]

(52) a. [+anaphor, -pronominal] 'trace'
b. [+anaphor, +pronominal] 'PRO'
c. [-anaphor, +pronominal] 'pro'
d. [-anaphor, -pronominal] 'variable'

(52b) and (52c) merit a bit more discussion. Recall from the Binding Theory that anaphors must be bound in their governing category while pronominals must be free in theirs. This leads to an apparent paradox since PRO must be both bound and free in its governing category. The solution is that PRO cannot have a governing category. One such environment is the subject position of infinitives, as in (50) above. (52c) is not available in English and other languages without the pro-drop parameter. It is in fact like any other pronoun except that it lacks phonological features. Languages with rich inflectional systems, such as Portuguese (cf. (51)) can easily "recover" the information lost in this lack of phonological content and therefore use **pro** frequently (subject to other restrictions which do not concern us here.)[11] With these basic notions in mind, then, let us turn to consider in more detail the analysis of the facts from Pirahã.

4 Towards an analysis of intrasentential reference in Pirahã

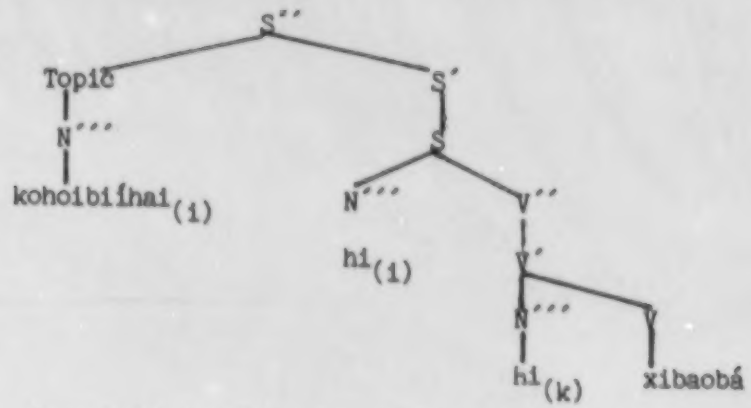
4.1 A failed analysis

As was noted earlier, the facts grouped as pseudotopicalization and complex reference might appear to be merely a type of topicalization, in which the pronominals **ti**, **gí**, and **hi** are simply pronouns. Were this the case, it would be a gross error to analyze the facts as clitic doubling. Therefore, it is necessary to demonstrate conclusively that the facts here cannot be characterized as topicalization, before we can take up the issue of clitic doubling.

We showed previously that right/leftmost pronominals in the pseudotopicalization/complex reference data are obligatorily coreferential with the right/leftmost NPs, respectively. Under the topicalization hypothesis, these reference facts could perhaps be attributed to some sort of relationship between pragmatic prominence, linear restraints on language processing, and an analysis of topics in the spirit of, say, Reinhart (1982). But it is relatively easy to refute this hypothesis. As a first argument, consider the structures which might be required, assuming again that the pronominals are full

pronouns in NP position. A possible phrase marker for (29) would be (53):

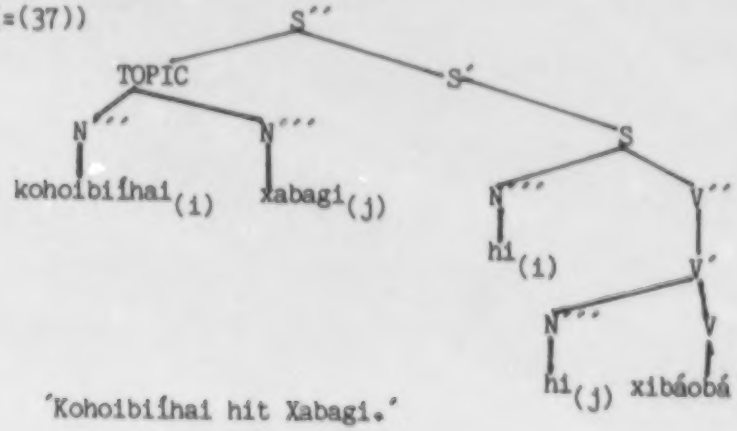
(53)



'Kohoibiíhai hit someone/him/himself.'

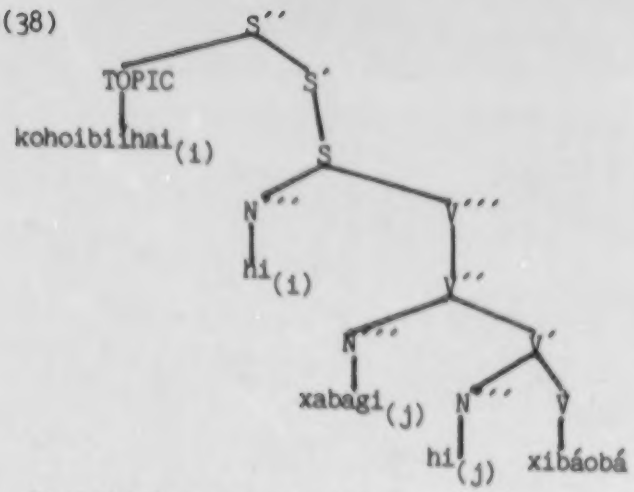
But now consider what sort of representation would be left us under this same hypothesis for (37) and (38).[12]

(54) (=(37))



'Kohoibiíhai hit Xabagi.'

(55) (=(38)



'Kohoibiíhai hit Xabagi'

(55) is only one of many conceivable analyses under the TOPIC-pronoun hypothesis, but it is representative of the type of difficulty faced. Supposing (38) to be generated as (55), we create the serious problem of offering distinct treatments for each of the pairs, **kohoibiíhai**$_{(i)}$, **hi**$_{(i)}$ and **xabagi**$_{(j)}$, **hi**$_{(j)}$. In the first pair we apparently could derive the indicated coreference through some special rule of TOPIC interpretation along the lines of Chomsky (1977). But in the second instance, we would be forced to propose a different means of guaranteeing coreference. Further, we would need to decide exactly what sort of animal the N''' dominated by V'' is: argument (A) or nonargument (A') position - either answer being problematic for theory internal and language specific reasons. For example, if it is an A-position we have three such positions under VP and two with the same grammatical function (indirect object, under V''', as well as the V'' and V' direct objects). If it is an A'-position we have the unusual case of a nonargument position base generated under VP.

Alternatively, we could propose that **xabagi** is moved to its position in (55) in the PF component. This would resolve the configurational dilemma but would raise the more serious problem of how to restrict such a potentially powerful mechanism as PF movement of NPs, a problem which does not arise under the clitic analysis proposed below. In any case, it is clear that we are faced with some knotty configurational problems if we assume simultaneously that (37) and (38) are topicalized and that the pronominals are full pro nouns (cf. also the discussion examples (68)-(70) below).

Moreover, even if we could overcome the configurational problems, we would still be left with the problem of how to guarantee the correct reference relations. Surely, we cannot be satisfied with some mere muttering about a "pragmatic problem." We have no explanation for why the reference is assigned in the required fashion or how to

eliminate the **ungrammatical** (and not merely pragmatically anomalous) results of incorrect indexings. Finally, were all of these problems satisfactorily resolved, a much greater difficulty exists for a topicalization analysis of such examples - the fact that Pirahã has clearly topicalized structures (and in which structures such as (29), (37) and (38) can be embedded).

Note that, as they stand, pseudotopicalization and complex reference sentences lack any sort of special phonological or morphological marking which might distinguish them from other sentences. In general, we might reasonably expect some sort of device to be used (cf. Givón (1976)). And in Pirahã, there exists a series of examples in which such special marking **does** exist, what we consider to be real **topicalization.** For examples, consider (56)-(58):[13]

(56) paigí$_{(i)}$ hi$_{(i)}$ xob -áaxái / paigí
Paigí$_{(i)}$ 3$_{(i)}$ see well / paigí

'(As for) Paigí, he really knows a lot.'

(57) hoaípi$_{(i)}$ hi$_{(i)}$ hoagí$_{(j)}$ hi xog -i -baí
Hoaípi$_{(i)}$ 3 son$_{(j)}$ 3 like -ep -int

/hoagí$_{(j)}$
son$_{(j)}$

'(As for) his son, Hoaípi really loves him.'

(58) hi$_{(i)}$ hi$_{(j)}$ koho -ai -baí / páxaihi$_{(i)}$
3$_{(i)}$ 3$_{(j)}$ eat -atelic -int / chicken$_{(i)}$

xigagí$_{(j)}$
pepper$_{(j)}$

'(As for) chickens and peppers, they really eat them.'

Note the separate intonational contours and pause between the main clause and its topic in these sentences. These structures are clearly highlighted as different from "run-of-the-mill" examples like (29), (37), and (38). Further, (58) shows clearly the difference in interpreting topicalized structures as opposed to pseudotopics or complex reference. For example, the only problem we create by reversing the indices in (58) is the rather difficult to imagine situation in which peppers eat chickens. Moreover, the subject **hi** in (58) could be substituted by **ti** '1' or **gí** '2' without affecting grammaticality:[14]

(59) a. $ti_{(i)}$ $hi_{(j,k)}$ kohoaibaí / páxaihi$_{(j)}$
xigagí$_{(k)}$ (píai)
(also)

'(As for) chickens and peppers, I really eat them.'

b. $gí_{(i)}$ $hi_{(j,k)}$ kohoibaí / páxaihi$_{(j)}$
xigagí$_{(k)}$ (píai)
(also)

'(As for) chickens and peppers, you really eat them.'

Topic may also occur leftward in Pirahã, as (60) and (61) demonstrate:

(60) xoogiái$_{(i)}$ / $ti_{(j)}$ $hi_{(i)}$ xog -i -hiaba
xoogiái 1 3 like -ep -neg

'(As for) Xoogiái, I don't like him.'

(61) xahoaógií$_{(i)}$ / xahoaógií$_{(i)}$ $hi_{(i)}$
xahoaógií xahoaógií$_{(i)}$ 3
xisaxoi-baí
sing-int

'(As for) Xahoaogií, he sings a lot.'

Such examples are less frequent, however, than rightward topics.

Once again, while some reference possibilities in topicalized structures may produce a sensation of strangeness, or no change in acceptability whatsoever, such indexing changes in pseudotopics or complex reference produce clear ungrammaticality.[15]

To summarize, real topicalization differs from pseudotopicalization and complex reference in three ways: (i) real topicalization is phonologically marked, (ii) real topicalization allows coreferring R-expressions to occur in apparent violation of the BCs, and (iii) real topicalization is subject to a freer, more pragmatically oriented interpretation of reference in which acceptability judgements are much less sharp.

A topicalization analysis of (29), (37), (38) etc. would, therefore, fail to explain these contrasts. Also, it would have difficulty in deriving the configurations involved, and it is less satisying empirically and theoretically than the alternative to be presented below.

Let us turn, therefore, to consider this alternative, beginning with a review of the notion of clitics in GBT.

4.2 An analysis of clitic doubling in Pirahã

4.2.1 A note on the nature of clitics. Kayne (1975:67) contrasts pronouns in French which can occur in environments where full NPs are allowed with those which may not. In so doing, he makes one of the first references to the term **clitic** in generative literature:

"Let us call the form of the pronoun that occurs in these environments its 'strong' form. In this class will fall **eux, nous, moi, toi, lui, elle, vous, elles.** Conversely, let us call the form of the pronoun that occurs... preposed to the verb its 'weak' or 'clitic' form, or simply 'clitic'. The direct object clitics corresponding to the above strong forms are **les, nous, me, te, le, la, vous, les.**"

Borer (1981) is one of the several recent treatments of clitics which go beyond Kayne's analysis in arguing that clitics are fundamentally distinct from NPs and "strong" pronouns both in their generation and in their function (cf. (64) below). Consider, for example, her discussion of an important observation of Kayne's (p.50):

"R. Kayne has observed that...clitic-doubling constructions can only occur if the NP which is doubled is preceded by a preposition. This generalization (which Jaeggli calls "Kayne's Generalization") is accounted for by Chomsky (the Pisa Lectures), Aoun (1979), and Jaeggli (1980) by assuming that in clitic-doubling constructions the clitic... absorbs the Case features of the head..."

Borer thus argues in favor of the conclusion that (p.49): "... clitics are best characterized as part of the head constituent."

This conclusion will play a crucial part in the analysis of clitic-doubling in Pirahã which follows.

4.2.2 Clitics, ecs and M-chains in Pirahã. Before proposing the analysis which we believe best handles the data in question, we want to introduce some additional examples of clitic doubling in Pirahã. As these phrases demonstrate, clitic doubling is also possible in NPs and PPs in Pirahã.

(62) a. **xaxái**$_{(i)}$ hi$_{(i)}$ kaíi
xaxái 3 house
'Xaxái's house'

b. xigihí$_{(i)}$ hi$_{(i)}$ xíbaisi
man 3 wife
'(The) man's wife'

c. xigihí$_{(i)}$ hi$_{(i)}$ xíbaisi$_{(j)}$ hi$_{(j)}$ kaob -á
man 3 wife 3 fall -rem
'(The) man's wife fell down.'[16]

Recall that nouns are Case assigners in Pirahã and that clitics are always optional (although most frequently present). Then the noun **kaíi** 'house' assigns Case to the proper noun **xaxái** in (62a) with no need of a special preposition or suffix. The clitic's role in these examples will be made clearer below.

(63) a. tábo$_{(i)}$ hi$_{(i)}$ xapó
board 3 on
'on the board'

b. baíxi$_{(i)}$ hi$_{(i)}$ giopaí$_{(j)}$ hi xigí -o -xopí
parent 3 dog 3 with -ob -go
'Mom/Dad went with the dog.'

To account for these new examples, as well as the reflexives, pseudotopics, and complex reference discussed earlier, let us supplement the categorial rules in (21) with the optional spell-out rule in (64) (cf. Borer (1981:52)).

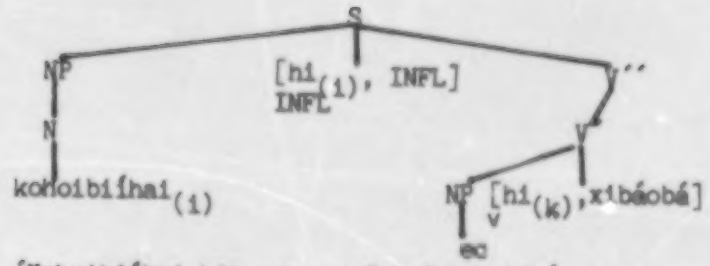
(64) $_X$[Case] X $\longrightarrow$ $_X$[[Case, person],X]

X = INFL, V, N, P

Then, by (64), any category with Case features (e.g. INFL, nouns, verbs, and prepositions) may optionally realize these features as a clitic.[17]

Consider, for example, the following structural analysis of the pseudotopicalized sentence of (29):

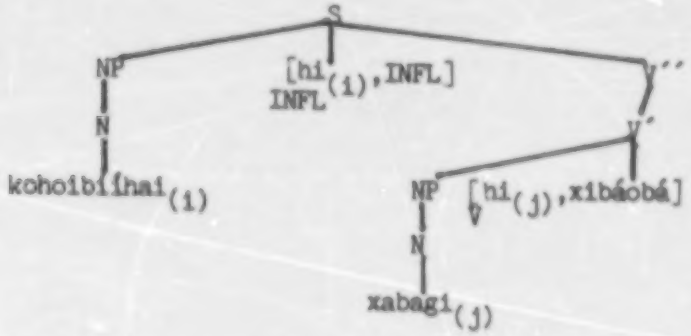
(65)



'Kohoibiíhai hit someone/him/himself.'

Now we may represent example (37) above as (66):

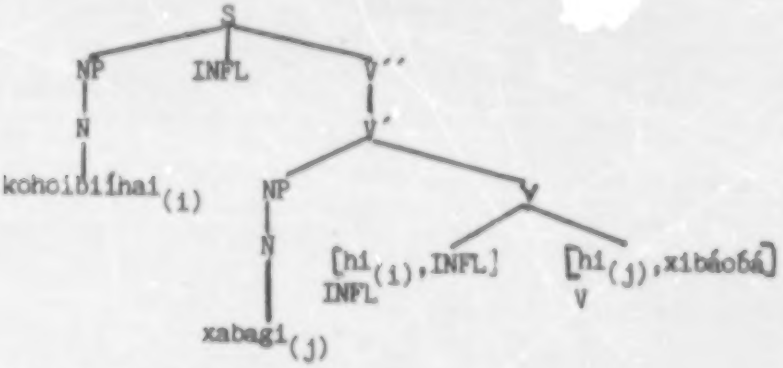
(66)



'Kohoibiíhai hit Xabagi.'

Then it is a simple matter to derive (38) from (37) through Move-α, producing (67):

(67)



'Kohoibiíhai hit Xabagi.'

We assume that this **INFL lowering** is in the PF component.

Note that we are not claiming here that **all** pronominals in Pirahã are clitics, only that the phonologically weak forms are. The present analysis allows pronouns to be base-generated normally under

NP. However, this raises a slight problem since then we have no clear explanation for the ungrammaticality of examples like (68) and (69):

(68) * ti ti ti ti xibáob'a
1 1 1 1 hit
'I hit myself.'

(69)* gíxai gí gíxai gí xibáobá
2 2 2 2
'You hit yourself.'

If, for example, the free form of **ti** '1' (which appears in examples like (i) Speaker A: **kmoi kaipí** 'Who did it?' Speaker B: **ti** 'me') is generated under NP and the bound **ti** as a feature spell-out on INFL and/or V, then (68) should be grammatical, likewise for (69). Although I have no really satisfying explanation here, it is likely that (68) and (69) are ruled out since they would be incredibly redundant semantically and wierd phonologically.

On the other hand, our analysis explains examples such as (70) quite handily:

(70) ? hiapióxiai$_{3(i)}$ hi$_{3(i)}$ hiapióxiai$_{3(j)}$ hi$_{3(j)}$

xibáobá.
hit

'Someone hit someone.'
He him
himself

(70) seems to be less redundant sematically and phonologically due to the vagueness of **hiapióxiai** and **hi** as well as their large phonological difference, and therefore no unacceptability is created by the generation of this type of example. Moreover, insofar as a topicalization analysis would assume both **hiapióxiai** and **hi** to be full pronouns, (70) seems to be a rather conclusive counterexample.

It is further assumed here that binding by clitics produces no violations of the BCs since, presuming that only binding falls outside the scope of Binding theory (in other words, that clitic binding is of a different sort, such as Bok-Bennema's (1981) **M-binding**. We return to this rule of INFL-lowering directly. First, we need to discuss just how to guarantee the correct indexing of clitics and doubled NPs, including the **ec** in (65).

The reader familiar with Stowell (1981) and Borer (1981) will have noted that our formula $_{X}$[cl, X] is a simplication. In the works just cited, it is argued tha **X** is in fact a bundle of information (cf. Borer (1981:54ff)). Among these bits of information

are the θ-role assigned by the head, the clitic and its index, and a slot for the index of the **complements** of X (cf. the works cited for further details). Then we will have something along the lines (71) (cf. Borer (1981:55)).

(71) $\left[_{X} \begin{bmatrix} \theta_1 \\ \Delta \\ cl_i \end{bmatrix} \right]$

Then, presuming in (68) to be the slot for the index of X's complements, we may make the reasonable assumption that the index of the clitic and in (71) must match or the structure will be ruled out. Under this more detailed account, correct coindexation between clitics and their doubled NPs is then derived from this **complement matching requirement.**[18]

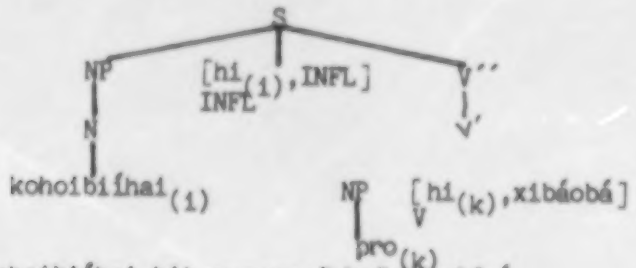
But at this point we come to a major difference between Pirahã clitics and those studied in these other works. The difference is that since no special Case assigner is necessary, it would appear that clitics in Pirahã do **not** absorb Case but in fact **transmit** Case to their doubled NPs, just as the bare categorial head on which they appear would, were they not present. I submit that this transmission is done through coindexation, reminiscent of transmission of Case and/or θ roles through traces in syntactic chains (cf. Chomsky (1981:333) and Safir (1982)). But since such chains either involve two elements in argument positions (as in NP movement) or are headed from a nonargument position, with a trace in argument position (as in WH-movement), it seems that what we are faced with here is a different type of chain. Let us call it for the moment a **M (morphological) chain.** We return to discuss this type of chain and the parameters and predictions it involves below.

The most urgent task facing us at present is the identification of the **ec** in (65). We will adopt recent proposals (Chomsky (1981; 1982); Safir (1981) that identify **ecs extrinsically** through the following criteria (where F is some set of grammatical features. Cf. Chomsky (1981:330)):[19]

(72) (i) α is a **variable** if it is locally A´-bound and in a A-position.
(ii) α is **pronominal** if $\alpha = {}_{NP}[F, (P)]$ where P is a phonological matrix and F is non-null, and either (a) or (b):
(a) α is free
(b) α is locally A bound by β with an independent θ role.
(iii) if α is an empty category which does not fall under (i) or (ii) and is locally A-bound, then it is an **anaphor.**

Now, following Borer (1981), we suppose that the **ec** in (65) is governed by the V clitic, **hi**$_{(k)}$. Thus, it cannot be PRO (since, as was mentioned earlier, PRO cannot be governed). But the **ec** could not be [+anaphor, -pronominal] either since, arguably, this would entail the formation of a syntactic chain with its antecedent, violating the θ criterion (cf. Chomsky (1981:333) and Safir (1982)). Further, the **ec** cannot be [+anaphor, -pronominal], a variable, since it is not locally A′-bound, as required by (72). Since this **ec** is free and neither a variable, an anaphor or PRO it must be **pro**, a pronoun without phonological realization. Under this assumption, the structure of (29) would be more accurately represented as (73):

(73)

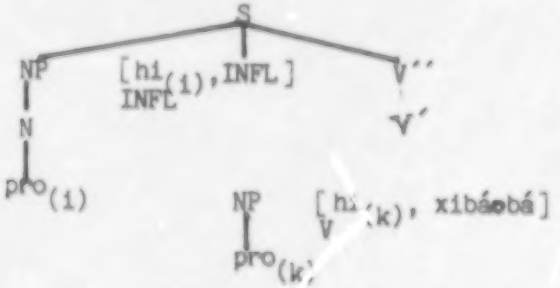


'Kohoibiíhai hit someone/him/himself.'

Then, in (73), the index **k** on **pro** and the **hi** in V may be interpreted in LF as either equal to **i** on **kohoibiíhai** and **hi** in INFL, producing a reflexive translation, or as distinct from **i** producing a nonreflexive translation. But since the BCs require pronominals to be free in their governing category, the governing category for **pro** in (73) cannot be S or it would violate the BCs under the reflexive interpretation. Recalling our earlier definition of governing category, let us assume that the clitic in V may serve not only as a governor for the **ec** but as a **SUBJECT** accessible to it. Then the governing category for **pro** in (73) will be V′′.[20] The governing category for the subject of S will be S by virtue of the clitic/features in INFL.

Now let us consider the structure of reflexives, as examples (24) above, represented as (74).

(74)



"Someone/he hit someone/him /himself."

Thus, under the present analysis, the fact that there are no special morphological forms for reflexive pronominals is explained, as is the ambiguity of such constructions, straightforwardly by the fact that reflexivization is a case of clitic doubling, involving the pair [pro, cl]. But now we must ask more specifically what kind of relationship obtains between the clitic and its doubled NP.

Chomsky (1982:87ff) assumes that the clitic may form a chain with the doubled element but that the clitic cannot transmit Case in such chains (citing references already mentioned in this paper on the "absorption" of Case by the clitic). However, it is not obvious that any such chain exists for the languages Chomsky considers. Adopting Borer's complement matching proposal, the doubled NP receives its θ-role directly from the θ-role directly from the θ-slot on the verb (cf. (71) above), coindexation with the clitic being an independent requirement. In fact, proposing that clitics and NPs/ecs form a **syntactic** chain, in the sense of Chomsky (1981:333) would produce a rather curious type of chain which the lower member, the clitic, can **not** transmit Case. Any proposed syntactic chain would thus be deficient in this respect. Our proposal is that the failure of Case transmission is explained by the fact that no chain exists in these languages, θ-role transmission being a function of the complement matching requirement and "θ-slots" on the verb.

On the other hand, in languages like Pirahã, where doubled NPs do receive features of Case, θ-roles, etc. through the clitic, it seems that a further concept is needed, what we referred to earlier as **M-chains**. In Pirahã, direct objects, subjects, genitives and postpositional objects may receive their required features from V, INFL, N, and P, respectively, by entering into an M-chain with their coindexed clitic.

Let us define an M-chain by the following.

(75) MC = (α, β) is an **M-chain** iff:
(i) α is a morphological category on X^0
(ii) β is an argument of X^0
(iii) α **M-binds** β [21]

Then, for any M-chain (α, β), α transmits the relevant features of X^0 to β (cf. Borer (1981) for more discussion of the features involved). That is, in languages with M-chains (and not merely M-binding), Case, θ roles, etc. are assigned to these and not simply absorbed by the morphological category, α.

We might propose the utilization of M-chains to explain the properties of clitic doubling in Pirahã as opposed to cases such as Hebrew and River Plate Spanish which do not allow M-chains, thus requiring a separate Case assigning device, since the clitic absorbs the Case of the phrasal head but it has no means to transmit it.

Clearly, the hypothesis that clitics form M-chains with their doubled NPs makes different empirical predictions than theories which do not recognize this possibility. Borer (198.) gives some interesting evidence from Hebrew which supports her contention that clitics absorb but cannot transmit Case. We will state this argument here and then test its predictions with regard to Pirahã. Consider the contrast in Hebrew between direct questions (76a) and free relatives (76b).

(76) a.* ma$_i$ xasavti 'al -av$_i$ ec$_i$ (Borer's (138b))
'what did I think about?'

b. ma$_i$ se-xasavti 'al-av$_i$ ec$_i$ (Borer's (138a))
'whatever I thought about.'

Borer explains this contrast by assuming (i) the extrinsic definition of ecs in (72) above, by which the ec in (76) is a variable, and (ii) that an ec is a variable if it has Case. Then she further argues that in free relatives, but not in interrogatives, the fronted WH element receives Case through Case marking into COMP, and therefore the ec may be said to have Case by virtue of being in a syntactic chain with the fronted element. Thus, (76b), a free relative, is grammatical.

But what about (76a)? Since the ec is A'-bound it should be a variable. Yet, because the clitic cannot transmit Case to this ec and since the fronted WH element cannot receive Case through COMP as its free relative counterpart in (76b) could, the requirements on variables produce contradictory specification of the ec, ruling (76a) ungrammatical.

However, according to our predictions here, if the clitic in (76) could form an M-chain with the doubled NP and/or its trace, the ec would fully satisfy the extrinsic definition of a variable, by receiving Case, and the structure would be grammatical, This would mean that in Pirahã, as opposed to Hebrew, WH movement should apply freely in clitic doubled constructions. Thus interrogatives and widescope interpretation in LF (cf. May (1977)) would be possible in clitic doubled configurations. Although at present we have no clear data on wide-scope vs. narrow-scope interpretation in Pirahã, there is abundant evidence from interrogatives.

Interrogatives in Pirahã are generally formed through verbal affixes. However, there does exist a free form WH element, **kaoi**, corresponding to English **who**. This form appears in constructions such as (77) and (78):

(77) xaoói$_{(i)}$ hi$_{(i)}$ kaoi$_{(j)}$ hi$_{(j)}$ kob -ai híx
foreigner 3 who 3 see -atelic inter
'Who does the foreigner see?'

(78) kaoi$_{(i)}$ hi$_{(i)}$ ti$_{(j)}$ xaho -ai -xiig -á
who 3 1 speak -atelic -cont -rem
'Who is speaking to me?'

Adopting the standard GBT analysis of interrogatives, **kaoi** 'who' will move into COMP at LF.[22] Thus, we will derive LF structures:

(79) [$_{S'}$ kaoi$_{(j)}$ [$_{S}$ xaoói$_{(i)}$ hi$_{(i)}$ t$_{(j)}$ kobai híx]]

(80) [$_{S'}$ kaoi$_{(i)}$ [$_{S}$ t$_{(i)}$ hi$_{(i)}$ ti$_{(j)}$ xahoaixiigá]]

According to the present analysis, these examples are grammatical since the clitic forms an M-chain with the trace of WH movement thus transmitting Case (θ roles, etc.) to it. The alternative analyses which do not recognize the possibility of such Case transmission by clitics via M-chains wrongly predict (79) and (80) to be ill formed LF structures. It cannot be objected that no movement takes place here since **kaoi** is quite clearly a WH element in Pirahã and must be raised in LF due to the very nature of WH interpretation in GBT. And this is true whether or not the language in question has movement in the syntax (e.g. English) or not (e.g. Chinese, cf. Huang (1981)).

It therefore seems clear that the facts here require us to recognize a new parameter of clitic configuration in UG - that of M-chains wherein clitics not only receive or express Case and other features of the phrasal head but transmit them to their doubled NPs.

One final question which needs to be answered before concluding the present study involves the nature of INFL in Pirahã, specifically, why is INFL-lowering into V'' optional in Pirahã but required in (most) other languages?

Recall that Pirahã does not express tense. Therefore, if we assume that the approximately sixteen basic aspectual distinctions in Pirahã (cf. Everett (to appear)) are generated directly on the verb, then INFL in Pirahã is primarily nominal in nature.

According to Safir (1981:427), the rule INFL-lowering is to be explained in terms of a **tense filter**:

(81) "The Tense Filter:
Tense features must be spelled out on a verbal phonological base."

If this filter is in fact the primary motivation for the obligatory application of INFL-lowering (Chomsky's (1981:256ff) "rule - R") then we might expect that in a language without tense in INFL,

such as Pirahã, the application of this rule is optional, which is in fact the case.

Thus we have explained the wide array of clitic doubling configurations in Pirahã and how these configurations differ from those in more well known languages.

At this point it seems reasonable to ask why languages should differ along these lines and, specifically, what makes clitics so different from other nominals. We leave this more speculative discussion for the appendix.

Appendix: Clitics, pronouns and affixes

Typologists have long been intrigued with how agreement features on verbs and other categories develop. Specifically, various works have raised the question of how such features relate synchronically and diachronically to pronominals. In this appendix, I would like to offer a few suggestions as to how the facts observed by such typological research might be incorporated into a formal model such as GBT... Givón (1976) has proposed that pronouns are regularly "reanalyzed" diachronically as verb agreement, on the basis of examples such as (82):

(82) a. The man, he came.
b. The man he-came.

According to Givón, speakers eventually may come to use the marked, topicalized structure in (82a) , as an unmarked, nontopicalized sentence, with no pause following the first constituent and with the pronoun phonologically bound to the verb. Over the course of time, so this reasoning goes, the phonologically weak pronoun may come to be reanalyzed as a verbal affix, losing its status as an independent word.

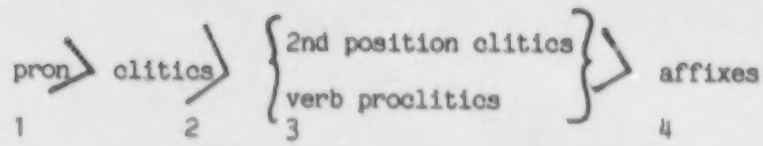
Similar suggestions are to be found in other works such as Shaul (1983) and the references cited there, in which "diachronic stages" are proposed, as in (83):

(83) pronouns > clitics > { second position clitics / verb proclitics }

It is worth asking how this important work by typologists is to be understood in a theory such as GBT.

I submit that elements in (83) are defined by their relation to specific parameters of UG selected by the language in question. As a point of departure, let us propose a more inclusive version of (83), (84):

(84)



Exactly how do (1)-(4) in (84) differ? On the one extreme are the pronouns. Within GBT these elements can be further subdivided into pronominals and anaphors, as we have already seen. However, as a class, the factors which seem to best distinguish pronouns from other entities of (84) are their (i) phonological independence of the verb and (ii) inability to transmit syntactic features to their antecedents. Clitics in position 2 (**2 clitics**) then differ from pronouns in being more phonologically dependent on the verb and less restricted in their syntactic positioning, occuring pre- or postverbally and in doubled constructions in many languages (e.g. River Plate Spanish, Hebrew, etc. cf. also Shaul's discussion of Tepiman). However, **2 clitics**, like pronouns, still cannot transmit syntactic features to their doubled NPs.

But turning to the elements of position (3) in (84), **3 clitics**, we notice more rigid syntactic positioning than **2 clitics**. For example, according to Shaul (op cit:259), subject clitics in Tepiman went from relatively free order to more rigid positions:

"In the older Tepiman data, word order of nominals and predicate is rigidly SOV. The subject clitics, however, are movable (object pronominals being verb proclitics). In the modern languages, however, word order tends to be free while the positioning of the subject clitics is fixed."

A possible explanation for this **2 clitic** vs **3 clitic** distinction is the parameter of M-chains. Let us suppose that a language may choose to allow its clitics (all or some) to enter into M-chains with arguments or, in other terms, to allow Case, θ roles, etc. to be transmitted via clitics. Then it must "reanalyze" these pronominals as a morphological, nonargument category (or the θ-criterion is violated). Note that this is only a question of logical, not chronological order - we are dealing with parameters, not functional explanations). This could explain why such elements are more tightly ordered - as morphological categories they are rooted/fixed in specified morphological slots, e.g. in INFL and V, explaining second position and verb proclitics.[23]

The final "state" involves allowing both M-chains and the complete morphological absorption of these elements by the verb, etc. This last step is really quite natural, according to our view, since once M-chains are allowed, clitics merely fulfill the syntactic role of affixes. If they have no other role (pragmatic, semantic, etc.) then they lose their categorial distinctiveness and a natural step would be to simply absorb them into the verb morphology (something

which seems close to occuring in Pirahã and which has happened in other languages).

Note, too, that this speculation in fact makes some rather easily testable empirical predictions, supposing that the theory of clitics in Borer (1981) and the notion of M-chains suggested here are correct. **3 clitics** should, just as affixes, allow WH-extraction from doubled constructions as well as **quantifier raising (QR)** from such positions. This is due to the fact that the **ecs** left in such positions will receive Case and may be interpreted without contradiction as variables (cf. (79) and (80) above). Further, **3 clitics** should eliminate the need for prepositions or other Case assigners for the doubled NP. We have shown Pirahã clitics to be of this type.

In Everett (1983b), it is suggested that Piedmontese, a Romance dialect, presents further evidence supportive of this. For example, clitic doubling is obligatory (except from direct object position in non-topicalized structures. Cf. the work just cited for some discussion) and requires no special Case assigners (although a preposition is **optional** with dative Case):

(85) a. mi j u purta -je
1 pronoun 1-clitic have brought -dative clitic

al liber al dzyzép
the book the Joseph

'I bought the book to Joseph.'

b.* mi u purta -je al liber al dzyzép

c.* mi j u purta al liber al dzyzép

(86) a. {al / aŋ} liber, j u purta -j

(the) book 1-clitic have brought -dative clitic

-lo al dzyzép
-accusative the Joseph
-clitic

'(As for) the book, I have brought it to Joseph.'

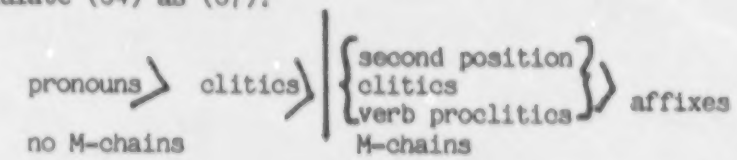
b.*{al / aŋ} liber, j u purta -je al dzyzép

(85) and (86) show clearly that clitic doubling is not only obligatory in Piedmontese but that no special Case assigner is necessary. Moreover, R. Ilari, a native speaker of Piedmontese, tells us that (86) allows either a definite or indefinite element in Topic

position. If we presume that, following May (1977), QR applies in LF to interpret indefinites then we must conclude that the clitic **lo** in (86) may form an M-chain with the **ec** argument of **purta** 'brought' to attribute Case to the variable left at LF by QR. Piedmontese lends some support to our hypothesis.

If in fact this reasoning is on the right track, we may reformulate (84) as (87):

(87)



Thus, we will have taken a first step towards explaining the observations of typologists suggested by (83) in terms of testable/falsifiable universal parameters of UG.

Notes

* Pirahã is a member of the Múra language family of central Brazil which also included the now (probably) extinct dialects of Múra, Bohurá, Yaháhi, Torá, and possibly, Matanawi (although data are scarce). The phonemes of Pirahã are /p/, /t/, /ʔ/, /b/, /g/, /s/, /h/, /i/, /a/, /o/. /ʔ/ is represented orthographically as 'x'. Pirahã also has two (register) tones, high and low represented orthographically (on vowels) as /´/ and zero respectively.

Abbreviations used in this paper are (syntactic category labels capitalized):

cl - 'clitic'
COMP - 'complementizer node'
compcert - 'complete certainty evaluative'
cont - 'continuative aspect'
DET - 'determiner'
ep - 'epenthetic'
imp - 'imperfective'
INFL - 'inflection'
int - 'intensive'
INTER - 'interrogative'
iter - 'iterative'
MOD - 'modifier'
neg - 'negative'
obl - 'oblique'
perf - 'perfective aspect'
prox - 'proximate aspect'
punc - 'punctiliar aspect'
relcert - 'relative certainty evaluative'
rem - 'remote aspect'
1 - 'first person singular'
2 - 'second person singular'
3 - 'third person singular'

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1. Throughout this paper, subscripted letters indicate reference relationships.

2. These terms will be explained more fully in Sect. 3 below.

3. Other readings less relevant to the present context are:
$$\left\{\begin{matrix}\text{Someone}\\ \\ \text{He}\end{matrix}\right\} \text{ hit } \left\{\begin{matrix}\text{someone}\\ \text{him}\\ \text{himself}\end{matrix}\right\}$$

4. The (b) examples are grammatical with pause after the first constituent giving the respective readings:
(i) ´Coffee, Kohoihiihai drinks a lot of.´
(ii) ?´Everything, God made.´
The reader is referred to Sect. 4.1 for further discussion.

5. This presumes that Pirahã is a **configurational** language. See Hale (1983) for a clear exposition of the differences between configurational and **non-configurational** languages.

6. This system may be said to violate Greenberg´s (1966:96) **Language Universal 42**:

"All languages have pronominal categories involving at least three persons and two numbers."

It is not really clear whether (22e) and (22f) should be treated as pronouns per se or simply as particles. (22f) at times is translatable as "all of it´ and it is clearly a compound form. (22e) may be translated as ´let us´ (+ verb) or as ´C´mon´. Thus, taking (22a)-(22d) as the clear cases, this system is the simplest yet documented to my knowledge. Moreover, an alternative form of the third person pronoun, **?i**, seems to be correlated in a high percentage of cases with feminine gender. While we have nothing more to say on this here, this would, if correct, violate still another language universal, Greenberg´s (1966:95) **Universal 36** (since Pirahã would then have gender but no number distinctions): "If a language has the category of gender, it always has the category of number."

7. **C-command** may be defined by: c-commands iff neither dominates the other and the first branching node which dominates dominates . A **maximal projection** is the largest expansion of a lexical category **X** allowed by X´ theory (and the language in question).

8. More exactly, these are required to be **properly governed**. Thi

will not concern us here, however, except to say that clitics (following Borer (1981)) properly govern their coindexed positions, permitting **ecs** in these positions.

9. Governing category may be defined as (following Huang (1983:557); cf. also Reuland (1983:127ff)):

" α is a governing category for β if and only if α is the minimal category containing β, a governor of β, and a **SUBJECT** that, if β is an anaphor, is accessible to β ,"

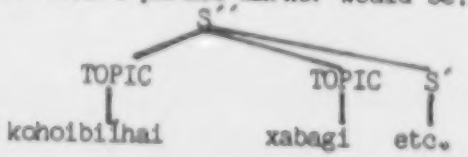
I will have more to say of **SUBJECT** in Pirahã below. See Chomsky (1981:209) for a definition of **SUBJECT**. Basically it is the most prominent nominal element in a particular category.

From other principles, we may also derive the fact that nouns with inherent reference, **R(eferent).-expressions**, (e.g. 'John', 'the dog', etc.) may not be bound.

10. These features represent the distinctions possible between **ecs** as well as **lexical** (i.e. phonologically realized) NPs. As is noted in Sect.4, however, the **ecs** of a given structure are determined **extrinsically**, i.e. by their behavior in that particular environment, rather than **intrinsically**, i.e. inserted predefined as (52a)-(52c).

11. But such languages cannot be limited to just those with agreement inflected verbs, since Pirahã has prodrop without this type of verbal morphology. See below for an analysis of some prodrop constructions in Pirahã.

12. An alternative phrase marker would be:



This seems less desirable, however, if we accept Kayne's (1981) suggestions on restricting tree structures. Note, too, that this topicalization hypothesis could be revised by analyzing the pronominals as clitics, along the lines of our suggestions below, to eliminate some of these configurational difficulties. But, as we show, this still leaves insurmountable problems of other types.

13. The symbols used are:

/ = pause; ⌒ = rising intonation

14. The reader may be puzzled by the multiple indices associated with **ni**. In such cases, **hi** refers to both topics, simply lacking a

morphological distinction for plurality. In Everett (1983b), I argue that multiple indices are necessary in a system without **anaphoric** indices (in the sense of Chomsky (1980)), to account for **split antecedents**. These arguments are largely superseded, however, by Higgenbotham (1983).

15. In light of the Binding Theory discussed in Sect.3, these examples need some explanation. It would appear that the proper nouns in examples like (61) are in violation of the BCs, which prohibit binding of such **R - expressions** in all environments. The best answer seems to be that in Pirahã (and I would expect other languages), S'' (but not S') is simply outside the Binding theory's domain, more a discourse type of interpretation strategy. (Cf. Everett (to appear) for discussion of Pirahã discourse). For example, (i) is hopelessly ungrammatical (with or without clitics. Cf. this with (61)):

(i) *[kóxoí kóxoí xibáobá]
S'
kóxoí kóxoí hit
'Kóxoí hit Kóxoí.'

16. Note the structural ambiguity in (62c). This example may be parsed as either (i) or (ii), with the semantic differences noted:

(i) [[xigihí [hi xíbaisi]] [hi kaobá]
S' NP VP
'The man's wife fell down.' (as in (62c))'

(ii) [[xigihí] [hi...] [xíbaisi hi kaobá]]
S NP INFL VP
'The man threw his wife down.'

17. Note that the explanation of clitic configurations given below, while concentrating on phonologically realized clitics is equally valid when the clitic is not phonologically realized, that is, when (64) does not apply. When the clitic is not realized phonetically, its empty slot on the phrasal head may still form an M-chain with the doubled NP or **ec**.

18. It is clear that guaranteeing the correct indexation of clitics in INFL cannot be complement matching in this sense, since INFL has no complements (meaning arguments to which it assigns a θ role). A first suggestion would be to understand the indexing of INFL with [NP,S] along the lines stipulated in Chomsky (1981:211): "AGR is coindexed with the NP it governs."

In this and subsequent work, Chomsky assumes the expansion of INFL to be:

(i) INFL ⟶ [+AGR,+ Tense]

AGR is a nominal feature complex . Since tense, as has been shown, is not a feature of INFL in Pirahã, and since we assume aspect to be generated on the verb (although this is not crucial were aspect in INFL we would simply modify the structures involved in the obvious way), then INFL as we are using it here for Pirahã is in fact AGR. The clitic in INFL (AGR) is the spell-out of the nominative Case (and agreement) features. This does not substantially alter the present analysis, however.

19. Local X binding is defined as (Chomsky (1981:184ff))

(i) "... α is X - bound by β if and only if α and β are coindexed, β c-command α, and β is in an X - position..."

(ii) "... α is locally bound by β if and only if α is X - bound by β, and if γ - binds α then either γ Y - binds β or $\gamma = \beta$."

In these definitions X/Y refer to binding from an argument (A) or nonargument (Ā) position.

20. Considering V'' as a governing category in Pirahã may not be so unusual as it appears at first sight. The primary difficulty would be to establish that V'' has a **SUBJECT** accessible to the anaphor or pronominal **ec**, etc. But it seems to me that the clitic is an accessible **SUBJECT** for the [NP, V'] position, since it must agree with this NP. In fact, the common definitions given for **SUBJECT** hold quite well for V'' in Pirahã. Reuland (1983:127) proposes that **AGR** is "... indeed a **SUBJECT** in the sense required by the binding theory." Since the verb **does** have (object) agreement, independent of the (subject) agreement of INFl, then it seems reasonable to view this (clitic) agreement in V as a possible **SUBJECT.**

This would in effect make V'' a subtype of (or semi) clause. If this were the case, we might expect to find some other clause-like properties of V''. Such properties do seem to exist. Consider, for example, (oo)relative clauses:

(i) [$_S$ ti baósaápisi xog -abagaí [$_S$ páxai hi
1 hammock want-frustrated priest 3
initiation

[$_V$ go -ó { baósaápisi / ec } bag -áo -b á]]]

WH -obl sell -telis -perf -rem
'I want the hammock which the priest sold.'

Notice that these clauses may have an overt NP or an **ec** in the embedded relativized position. The interesting fact in this context, however, is the WH element **go** (used in interrogatives also, cf. Everett (to appear). This **go** -ó appears to the right of the INFL clitic **hi** in the subordinate clause and is marked with the oblique suffix -o, two clear evidences that it is in V'', at the far left periphery. A possible explanation for **go** being in V'' rather than S may be found in considering V'' as a governing category (although, admittedly, this is quite speculative). The fact that the overt NP may co-occur with **go** shows too that **go** could not be simply a WH element **in situ**, but that it is a type of semicomplementizer at the V'' periphery. We will not pursue this further here, noting merely that V'' in Pirahã does have some peculiar properties which might be partially explained by its status as a governing category.

21. Bok-Bennema (op cit) defines M-binding as:

"M-binding: α M-binds β, if α is coindexed with β, and α c-commands β, and α is a morphosyntactic category and β is an argument."

22. To take a more neutral stance, since COMP seems to be rightward (if relevant at all) in Pirahã, while WH movement is leftward in S((79) and (80) above) or in V'' (cf. note 20), it might be best to claim that **kaoi** is adjoined to the leftmost periphery of its clause. Cf. Brandon and Seki (1981) for evidence of this type of phenomenon in other Amazon languages.

23. While it might be more accurate to label the second position clitics as **INFL-clitics**, we will not pursue this here.

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A BEGINNING SKETCH OF THE HUASTEC NOUN PHRASE

by

Abdías Pablo E., Daniel Everett, and James Walker

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1 Introduction

The present paper proposes a preliminary analysis of nominal phrases in Huastec, a Mayan language spoken in the states of Veracruz and San Luís Potosí, Mexico.[1] This analysis is important in that it provides one of the first discussions of phrase structure in Huastec, a language regarded by some authorities as somewhat independent in its development in the Mayan family (for one classification of Huastec, cf. Voeglin and Voeglin (1977:224ff)).

While earlier studies of Huastec (cf. Walker (1983)) have claimed the basic word order to be VSO, material found in texts has adduced little evidence for this. In fact, the most frequent orders encountered in our Huastec discourse data are SVO and VOS, respectively. Sentences given in isolation by our language consultant and co-author, Abdías Pablo, are exclusively SVO. In any case, it seems that Huastec can safely be considered VO (note that it also has both prepositions and genitive-head noun orders, two statistically common correlates of this basic word order type.) Nevertheless, we leave the question open since its resolution is tangential to the question of noun phrase structure.

This study is organized as follows: First, a brief outline of the noun morphology is proposed, with indications as to the semantic range and co-occurrence restrictions among the positional classes listed. The second section addresses the facts of constituent order and configuration as well as some derived orders and relative clauses. The study concludes with an overview of pronouns.

2 Noun morphology

2.1 Introduction

Word classes or lexical categories in Huastec are nouns, verbs, pronouns, adjectives, adverbs, conjunctions, articles, prepositions, and the negative particle, **yaba?**. Before turning to nominal morphology, let us state briefly the structural and distributional features which distinguish nouns from other lexical categories in Huastec.

Nouns are distinguished from other lexical classes distributionally as well as by their internal structure. Thus, to begin with a rather obvious fact, nouns, and not adjectives, etc., may occur in subject position. Similarly, only nouns may occur in direct object (generally immediately postverb) position (But there is some overlap with quantifiers in these positions. cf. 3.2.3 below). On the other hand, nouns may never occur in prehead position within the noun phrase, whereas adjectives may. Only nouns may appear in the position X article clitic adjective _____ Z.

Structurally, nouns are distinguishable from other word classes in taking the suffixes **-e** 'pretransitional', **-il** 'possessive', **-lom** 'verbalizer/collectivizer, and perhaps a few others (cf. below for more discussion).[2]

2.2 Positional classes

2.2.1 Basic structure and co-occurrence restriction. The nominal affix position classes may be represented as in (1):

(1) clas - ROOT - pret - ver/nom - pos - pl

0	1	2	3	4	5
lab-	root	-e	-lab/-lom	-il	-tsik

The following co-occurence restrictions have been noticed:

(i) Position class 2, **-e** 'pretransitional' may not co-occur with classes 3 and 4.

(2) a. kwitol -e 'still (like) a boy'

b.* u kwitol -e -il 'still like my boy'

c. kwitol -e -tsik 'still like boys'

(ii) Members of class 3 may not co-occur (for example:
(a) itsich 'seed'
(b) itsich-lab 'seeds of the same kind'
(c) itsich-lom 'seedfield'
(d) *itsich-lom-lab
(e) *itsich-lab-lom

(iii) **-lom** 'verbalizer/collectivizer' and **-tsik** 'plural' may not co-occur.

Once again, although evidence supporting these claims is provided below, the linear diagram in (1) (representing a decision based on distribution and function) is to be taken as quite tentative.

2.2.2 Individual affixes.

2.2.2.1 lab- 'classifier'. Larsen (no date) lists two prefixes **at-** 'similarity/proximity' and **lab-** 'foreignness' for the Otomiel Oyarvide dialect of Huastec near San Luís Potosí. However, for the dialect spoken by A. Pablo, (henceforth APE) that which we are describing here, only the morpheme **lab-** may be considered a prefix, and that in a very restricted number of cases. Due to the limited number of prefixes and their infrequent manifestation, we hypothesize that **lab-**

may have been an adjective meaning 'foreign' which has been restricted in use to a few crystallized forms. For example,

(3) a. tom 'grass'

b. lab-tom 'Mexico City'

(4) a. chanak?w 'black beans'

b. lab-chanak?w 'foreign beans'(ie. not indigenous to area)

(5) a. kaw 'language'

b. lab-kaw 'Spanish' (this term is used exclusively for Spanish)

We have chosen to label **lab-** as 'classifier' due to its principle function of distinguishing or classifying a particular object as of a non-Huastec origin.

It would not be very useful to consider **lab-** as simply an adjective with limited distribution due to the rather idiosyncratic effect it produces when combined with a particular noun (only a small set of nouns may in fact appear with **lab-**) as well as the fact that **lab-N** constructions behave as a single noun in allowing adjectives to precede them (the co-occurrence of other adjectives is almost nonexistent).

(6) k?achenek lab-chanak?w
rotten nclas-kind of bean
'rotten (foreign) beans'

2.2.2.2 **-e 'pretransitional'.** This suffix is used to mark a particular noun (generally human, although examples such as (8) below are found as well).

(7) Jaja? chapik jun-t?a u t?oj-n-al abal
3 hard one-very 3 work-?-pres sub

kwitol-e bel
youth-pret still

'He works very hard because he is still a youth.'

(8) Dajaw-e in kal-el t u k?ima?
early morning-pret 1 leave-pres prep my house

abal kin ulich alwa? n in ajum-tal
sub 1 arrive(nonp) well det 1 read-inst

n a k?itsa
det hon day

'I would have to leave my house while it's still early morning to arrive at a good hour of the day.'

(9) akal-e bel tam ti ulich an ab
night-pret still when prep arrive the rain
'It was still night when it started raining.'

(10) It ti tom-ki-nek n a Chabela bel t?a
new prep marry-?-perf det hon Chabela still very

tsidan-e
girl-pret

'Chabela is newly married; she is still just a girl.'

(11) and (12) show the co-occurrence possibilities of **-e**:

(11) bel t?a tsidan-e-tsi
still very girl-pret-pl
'still just girls'

(12) a.* bel in tsidan-il-e
'still his girl'

b.* bel tsidan-lab-e
'still girls (girl-like)'

c.* bel tsidan-lom-e
'still a group of girls'

2.2.2.3 **-lab 'nominalizer/generic'**. Although **-lab** may also occur on verbs as a nominalizing suffix, here we discuss only its use with non-nominalized noun forms. When **-lab** is suffixed to a noun, the result expresses a more generic meaning of the noun, as in (13):

(13) a. mim 'aunt'

b. mim-lab 'lady'

(14) a. pay?lom 'father-in-law'

b. pay?lom-lab 'gentleman'

(15) a. akan 'foot/stem/tree trunk'

b. akan-lab 'post (e.g. used in house building)'

(16) a. itsich 'seed'

b. itsich-lab 'seeds (of the same kind)'

Compare also (17) in which the more prestigious reading associated with **-lab** seems to suggest some sort of sense like 'epitome of':

(17) a. An kwitol xi tin tol-mi-y-al tin
the youth relative 3-1 help-?-tr-pres 1

t?oj-n-al jaja? u chakam-lab ba n a Fernando
work-?-pres 3 3 son-genr on the hon Fernando

b. An kwitol xi tin tol-mi-y-al tin
det youth relative 3-1 help-?-tr-pres 1

t?oj-n-al jaja? in chakam-il n a Fernando
work-?-pres 3 3(pcs) son-pos the hon Fernando

'The boy who helps me work is Fernando's son.'

Although both (17a) and (17b) may be translated as suggested immediately above,in (17b) the son is viewed as somehow more prestigious. Note, too, that different clitics are used, as well as the fact that **Fernando** is preceded by a preposition in (17a).

One possibility is to interpret **chakam-lab** as a generic expression along the lines of 'boy-epitome-of-boy-qualities'. In this more general sense, it is natural that **chakam-lab** cannot be possessed. Thus the preposition **ba** is used but **-it** 'possessive' may never be. Then **Fernando**, although seen as intimately associated with this exemplar of boyhood, may not possess it.

2.2.2.4 -lom 'verbalizer/collectivizer'. Although **-lom** is used to derive a verbal sense from a noun, it is not limited to this. It may also express the notion of collectivity. Examples of both uses are found in (18)-(20).

(18) Yejat tu bitsow-lom waxik ti waxik
it's necessary we town-ver eight at eight
'It's necessary that we shop around in town every week.'
visit
mess around in,etc.

(19) a. ale 'field'

b. ale-lom 'to go to the field (to see what needs to be done)'

(20) Nana? u kul-bet-n-al ku ko?oy jun i
1 1-3 like-?-?-pres 1-3 have (nonp) one det

wich-lom abal ku nuju an
flower-col sub/pur 1-3 sell(nonp) the

wich ani abal ku wich-ix-n-a? an
flower and sub/pur 1-3 flower-?-?-nonp the

t u k?ima?
prep my house

'I would like to have a flower garden so I could sell the flowers and also decorate my house with them.'

Note again that **-lom** and **-tsik** generally do not co-occur:

(21) a. Nana? u ko?ol yan i pakab-tsik
I 1-3 have many det sugar cane-pl
'I have many (cut stalks of) sugar cane.'

b. Nana? u ko?ol yan i pakab-lom
I 1-3 have many det sugar cane-col
'I have many sugar cane fields.'

c.* Nana? u ko?ol yan i pakab-lom-tsik

Also **-lom** cannot appear with any specific number:

(22) a.* Nana? u ko?ol jun i pakab-lom
one

b.* Nana? u ko?ol che? i pakab-lom
four

But cf. (23):

(23) a. Nana? u ko?ol jun i pakab
'I have one sugar cane.'

b. Nana? u ko?ol che? i pakab(-tsik)
'I have four sugar cane stalks.'

A further property of **-lom** is that it can only express the notion of an amorphous grouping. It may not be used to express a multi-individual sort of collectivity, as is shown in the examples above, as well as its failure to occur with animate objects as in (24):

(24) a. Nana? u ko?ol i bitsim (-tsik)
horse
'I have horses.'

b.* Nana? u ko?ol i bitsim-lom
'I have a herd of horses.'[3]

It is interesting, we think, that the suffixes **-lab** and **-lom** both may be used to either change the categorial status of a lexical item or produce a generic or collective expression. Perhaps, therefore, a more appropriate interpretation of the effect produced by these morphemes is that of semantic diffusion. That is, the meaning of the element in question is diffused in the sense that it becomes associated with a general property rather than a specific object or event. Under this alternative interpretation, the fact that a change in lexical category may take place is secondary. A general property may be perceived as a nonspecific event/action or nonspecific/generic object, in the sense of class like objects.

Regardless of the view adopted, however, it is difficult to avoid the conclusion that both **-lab** and **-lom** have what would traditionally be considered as inflectional and derivational uses. This lends support to the hypothesis that in fact the very derivational - inflectional distinction is not a universal dichotomy, if in fact it can be justified at all (cf. Muysken (1981) and Anderson (1983) for more discussion of this issue).

2.2.2.5 -il 'possessive'. **-il** appears on the head noun of a possessive noun phrase. The allomorphs of **-il** are **-jil** following vowels, as in (25):

(25) a.	k?itsa		'day'
b.	u k?itsa-jil		'my day'
	my day -pos		

(26) a. karro 'car'

b. u karro-jil 'my car'
m car-pos

-al is a phonologically unpredictable variant of **-il** (that is, the phonetic contexts in which **-al** and **-il** may occur seem to be indistinguishable).

(27) a. tumin 'money'

b. u tumin-al 'my money'

(28) a. k?id 'thorn'

b. u k?id-al 'my thorn'

-tal has been observed in one case:

(29) a. alwa? 'good'

b. u alwa?-tal 'my good'

Other examples include:

(30) Yab-ich u le? ku uch?-a? n u
neg-already 1-3 want 1-3 drink-nonp the my

ilal-il abal yab-ich alwa?
medicine-pos sub neg-already good

'I no longer want to take my medicine because it isn't any good any more.'

(31) shows that nominalized forms can also be marked with **-il**.

(31) a. tam ti ch?akay an pejex-ta-lab
when prep rise up(nonp) the fight-inst-nom
'when the revolution started'

b. u pejex-ta-lab-il
my fight-inst-nom-poss
(i) 'my revolution'
(ii) 'my arms (ie. military hardware)'

A final observation on the possessive morpheme **-il** is that it is not found on nouns denoting body parts:

(32) a. u akan
my foot
'my foot'

b.* u akan-il

(33) a. akan-lek
foot-print
'footprint'

b. u akan-lek-il
'my footprint(s)'

An exception to this lack of co-occurrence with body parts is the word **xi?** 'hair'.

(34) U chu?t -al jun in xi?-il i bitsim
1-3 see-pres one posp hair-pos det horse

kwachat chabal.
spread-out ground

'I see a horse hair lying on the ground.'

2.2.2.6 -tsik 'plural'. **-tsik** may be suffixed to adjectives and verbs as well as nouns. In Sect. 3.3.2.3 we discuss the semantic effects of multiple appearances of **-tsik** in a clause (cf. also Sect. 3.4 below on the interaction of **yan** 'many' and **-tsik** 'pluralizer'. As is shown above, **-tsik** may not co-occur with **-lom** 'collectivizer.'

(35) Nana? u ko?ol i bitsim-tsik.
I 1-3 have det horse-pl
'I have some horses.'

(36) an olom-tsik wat?ey t in tamet an wi?leb
the pig-pl pass by(nonp) prep ppr front the door
'The pigs passed by the door.'

2.3 Suppletion

Although suppletion is a common feature of Huastec verb morphology, it is rarer in other classes such as adjectives. We have registered but one example of suppletion in nouns:

(37) a. ata 'house'

b. u k?ima?
'my house'

c.* u ata
'my house'

An example of suppletion in adjectives is (38):

(38) a. pulek 'big'

b. pakda? 'big plural'

(39) a. jun i pulek olom
one det big pig
'one big pig'

b. yan i pakda? olom(-tsik)
many det big pig -pl
'many big pigs'

c.* jun i pakda? olom
'one big pig'

d.* yan i pulek olom(-tsik)
'many big pigs'

2.4 Stress[4]

Stress in Huastec words (all categories) is predictable according to the following rule:

(40) Stress rule: Stress falls on the rightmost long vowel in the word. If there is no long vowel it defaults to the leftmost short vowel.[5]

In the following examples, ´indicates intensity and ' indicates vowel length.

(41) a. tú? 'gourd'

b. tú'? 'over there'

(42) a. k?álam 'squash'

b. kalá'm 'tomorrow'

(43) a. tólmiyal 'to help someone'

b. juntsikí'l 'at times'

(44) a. ch?éjwaliyal 'to give to someone'

b. jalbintsí'ch 'thank you'

Suffixes are also relevant to rule (40). Thus, an added long vowel suffix, such as **-la"b** 'nominalizer' will attract primary stress to itself, as in (45b):

(45) a. jalbintsi'ch 'thank you'

b. jalbintsi'ch-ta-lá"b
inst-nom
'thanks (noun)'

For further details and exemplification, the reader is referred to Larsen and Pike (1949).

3 The phrase

3.1 Basic linear order

The basic linear order of noun phrase (NP) constituents in Huastec may be represented by:

(46) Quantifier Demonstrative Article clitic Adjec NOUN Rel
Numeral Hon
preposition

In this section we describe several features of NP structure and distribution in Huastec, including case assignment, pseudocleft constructions, relative clauses, and hierarchial structure, as well as classification and distribution of the elements in (46). We begin with a discussion of each of the constituents in (46), taking them up according to their left to right ordering in the NP. This is followed by a discussion of the other items just mentioned.

3.2 Quantifiers

3.2.1 Structure and distribution of quantifiers. It is necessary to posit a distinct lexical category 'Quantifier' on distributional grounds.[6] Thus, although adjectives and quantifiers are similar in that both may manifest many of the same affixes (eg. **-tsik** 'pl', **-da?** 'pl', **-ich** 'posttransitional', and **k?i** 'limitivizer'), they appear in distinct syntactic positions:

For example, whereas adjectives must immediately precede the

they modify following the article, quantifiers never appear in this position:

(47) a. ejtal an (dak) idid
all the (white) corn
'all the white corn'

b.* (dak) an ejtal idid

c.* an ejtal (dak) idid

d.* an (dak) ejtal idid

Moreover, quantifiers may appear to the right of the noun which they modify, as well as sentence initially or sentence finally, while adjectives may never appear in these positions. This is exemplified and discussed in 3.2.3 below.

3.2.2 Discussion and exemplification. A partial list of quantifiers includes the following:

(48) a. ejtal 'all/everyone'
b. we? 'a little'
c. tokot 'only'
d. putal 'everywhere'
e. yan 'many'
f. tabat 'much'
g. ch?ejel 'half'
h. jidtal 'first'
i. chab-ox 'some' (lit. 'two-three')

These quantifiers may manifest one of several suffixes. Although as yet no exhaustive study of quantifier suffixes has been carried out for Huastec, a few examples are found below and elsewhere in this section. None of these suffixes is exclusive to quantifiers, however, appearing also on nouns, adjectives, and/or numerals (and, in the case of **-tsik** 'pl', on verbs as well).

The suffix **-il** may be used to express the notion of succession.

(49) Yan-il tin kwaj-lan ban lichiy bel
many-suc 1 fall-nonp on slippery road
'I fell many times in succession on a slippery road.'

-ich 'posttransitional' may be suffixed to certain quantifiers to produce an effect similar to 'already' in English.

(50) Jeche? an chakam kwitol tabat-ich in
this the small boy a lot-post 3-3

ejt-um-al an exob-lach xi
be:able:to-perf-pres the study-nonp rel

ok?-tsi-nek k?al an ok?-ts-ix
teach-app-perf with the teach-app-ant

'This child has already learned a lot of the lessons that the teacher has taught him.'

k?i 'limitivizer' may be used in the sense of 'just', focussing on the quantification of the NP, as in (51):

(51) Tokot jilk?on chab-ox-k?i xi k?os-da?
only remain two-three-lim rel thick-pl

in akan-lab-il an ata.
pospro foot-nom-pos the house

'Just a few of the big poles of the house remain.'

(52) Jeche? i tamub u chu?-t-al putal-k?i
this indef year 1-3 see-?-pres all-lim

t?oj-nek an inik-tsik
work-perf the man-pl

'This year I see that men have worked just everywhere.'

-da? and **-tsik** express collective and multi-individual plurality, respectively.

(53) N a Pedro tam ka k?ale an ti nuj-ul
the hon Pedro when he goes-nonp the prep sell-ant

yan-da? in jun-al an nuj-nel
many-colpl 3-3 carry-pres the sell-nom

'When Peter goes out selling he has a lot of merchandise to carry.'

(54) In ey-n-al yan-tsik i t?ojnal n a Juan
3-3 use-?-pres many-pl det worker the hon John

x in chu-m-al alwa? u t?oj-n-al tam
rel 3-3 see-perf-pres well 3 work-?-pres when

kin t?oj-on-d-a? n a Juan
3 work-?-caus-nonp the hon Juan

'John hires a lot of workers whom he has seen to work well when he has hired them.'

3.2.3 Quantifier placement

The following examples show that quantifiers may appear in several different positions within the clause:

(55) a. Jaja? in tsi?-d-al ch?ejel i xomom.
3 3-3 come-caus-pres half indef gourd
'She brings in half a gourd.'

b. Jaja? in tsi?-d-al in xomom ch?ejel.
'She brings in half a gourd.'

(56) a. Ne?ech ki juna? ejtal an tumin
go 1pl-3 carry all the money
'We are going to carry all the money.'

b. Ejtal ne?ech ki juna? an tumin.

c. Ne?ech ki juna? an tumin ejtal.

d.* Ne?ech ejtal ki juna? an tumin.

e.* Ne?ech ki ejtal juna? an tumin.

f.* Ne?ech ki juna? an ejtal tumin.

(56a)-(56c) represent the only grammatical options for placement of a quantifier in this sentence.

Other examples of quantifier placement are (cf (50) and (53) above):

(57) a. Tabat-ich jeche? an chakam kwitol in
a lot-post this the small boy 3-3

ejt-um-al an exob-lach
be:able:to-perf-pres the study-?

'This child has already learned a lot of the lessons.'

b. Jeche? an chakam kwitol tabat-ich in
this the small boy a lot-post 3-3

ejt-um-al an exob-lach
be:able:to-perf-pres study-nom(?)

'This child has already learned a lot of the lessons.'

c. Jeche? an chakam kwitol in ejt-um-al tabat-ich
an exob-lach.

(58) a. N a Pedro tam ka k?ale an ti nuj-ul
the hon Pedro when he goes-nonp the prep sell-ant

in jun-al yan-da? an nuj-nel
3-3 carry-pres a lot-colpl the sell-nom

'Peter has a lot of merchandise when he goes out
selling and so he has a lot of merchandise to carry.'

b. N a Pedro tam ka kale an ti nuj-ul in jun-al an

tam ka k?ale an ti nuj-ul anij in
when he leave the prep sell-antip also 3-3

jum-al an nuj-nel yan-da?,
carry-pres the sell-nom a lot-colpl

'Peter has a lot of merchandise...'

At present, we are unable to find any differences in semantic scope, pragmatic markedness, discourse function, etc. for the different quantifier orders. Nevertheless, such relative freedom of placement within the sentence strongly supports the positing of quantifiers as a separate lexical category.

To sum up the observations of this subsection, quantifiers, when used to modify a noun, may appear in sentence initial, sentence final, NP initial, or NP final positions. Although a fuller discussion would lead us too far afield at this point, we should note that quantifier placement is restricted by the simple principle (59):[8]

(59) Quantifier Placement (or "Q Landing Sites") Principle:
A quantifier may be placed at the periphery of its (minimally) containing phrase or clause.

A final observation concerns the use of quantifiers in positions generally reserved for NPs, namely, subject and object positions.

(60) Witsich ejtal t in k?ima?.
return(nonp) everyone prep 3(pl) house
'Everyone returned to his/her/their house.'

(61) U le? tikin pid-a? we?.
1-3 want 2-1 give-nonp a little
'I want you to give me a little.'

This fact parallels nominal usage of quantifiers in various languages, as the English gloss shows as well. However, this is merely overlap in distribution rather than evidence for collapsing nouns and quantifiers into one category, as the previous examples of this section clearly indicate.

3.3 Demonstratives and numerals

3.3.1 Demonstratives. The basic demonstrative forms in Huastec are:

(62) a. je?/jeche 'this'

b. jachan? 'this'(very close to speaker)

c. nu? 'that' (proximate to speaker)

d. nuwa? 'that' (medium distance from speaker)

e. tu?/tuwa? 'that' (out of sight)

The plural marker **-tsik** may be suffixed to the long forms in (62) to produce plural readings. (Thus **nu?** 'that', which has no long form, has no plural form.)[9]

(63) a. jeche? -tsik 'these' cf.*je?-tsik

b. jachan? 'these'

c.* nu? -tsik 'these'

d. nuwa? -tsik 'those'

e. tuwa? -tsik 'those' cf.*tu?-tsik

Other deictic forms include:

(64) a. ja?ich 'this' (APE translates this as 'ése/ésa' cf. 3.7.2 below)

b. teche? 'here'

c. na? 'there' (medium distance from speaker)

d. taja? 'there' (in a particular known spot)

Examples of these elements in context are (unless specified, either the short or the long form may be used):

(65) Je? an bitsim(-tsik) ne?ech ku ch?o?may.
dem the horse (-pl) go 1-3 brand
'I am going to brand this horse/these horses.'

(66) Ka k?waj-b-a? an k?alam k?al (xi) je?.
2-3 put-caus-nonp the squash with (rel) this
'Put the squash with this one.'

(66) shows that Huastec demonstratives may modify or substitute for NPs.

(67) nu? an bitsim(-tsik) ne?ech ku cho?o?may.
dem the horse(pl) go 1-3 brand
'I'm going to brand that horse.'

(68) Jeche? an xi nu? an xi nuwa? yab u
dem and rel dem and rel dem neg 1-3

cho?ob xita? in dabal.
know who pospro owner

'I don't know who the owners are of this one or that one or the one over there.'

The focus or pseudocleft particle **ja?ich** is discussed in 3.7.2 below.

3.3.2 Numerals. The numeric system of Huastec follows the pattern of Mayan languages in general in its base-twenty system. Thus, **jun inik** 'one man' (**without** the article) refers to twenty, the basic unit of the system. Cardinal numbers occur in pre-article position while ordinal numbers appear between the article and the head noun, in normal adjective position (cf. (46) above). The indefinite article (cf. 3.4 below) is always required following a numeral.

(69) Nana? u ko?ol jun i dak bitsim.
1 1-3 have one indef white horse
'I have one/a(particular) white horse.'

As the translation of (69) indicates, the cardinal numeral **jun** 'one' may also be used to express the notion of indefiniteness. According to APE, the interpretation of (67) is **referential** indefiniteness. The notion of **nonreferential** indefiniteness seems to be expressed simply by using the indefinite article **i** without **jun**, as in (70):

(70) Nana? u ko?ol i (?dak) bitsim.
1 1-3 have indef (white) horse
'I have some (white) horse.'

Note that when the numeral **jun** is absent, the modifier is less acceptable. Evidently it is semantically anomalous to use a nonreferential indefinite construction and then modify it since modification of individuals generally implies reference. (However, the judgments are much sharper when a number other than **jun** is used, that is, without a quantifier e.g. **yan** or a numeral. Plurals are almost always interpreted as nonreferentially indefinite.)

Ordinal numbers have no similar function as the one described above and in fact behave as adverbs:

(71) x in chab-lab ti wa?chi-nek an olom ja?ich
rel 3pospro second prep born-perf the pig this one

ne?ech ku jil-a?.
go 1-3 leave-nonp

'The second pig to be born is the one I am going to keep.'

As is seen in (71) the ordinal numeral is derived from the cardinal numeral through the suffixation of **-lab** 'nominalizer' (but cf. the discussion in Sect. 2 on **-lab** and **-lom**).

3.2.1 Suffixation of numerals. Ordinals, such as **chab-lab** 'second one' in (71) are but one type of notion which can be expressed through the suffixation of cardinal forms. In addition to ordinals, temporal and adverbial expressions may also be derived.

For example, **-il** 'enumerator' can be suffixed to a particular number or the quantifier **yan** 'many' to express the idea of succession, as in (72)-(74):

(72) Jun-il ti seman in k?waj-il tin koy-ol.
one-enum prep week 1 be-pres 1 rest-pres
'Once a week I spend resting.'

(73) Yan-il tin kwaj-lan ban lichiy bel.
many-enum 1 fall-nonp on slippery road
'I fell many times (in succession) on a slippery road.'

The suffix **-ich** 'posttransitional' can be added to express the idea that a succession of events is over:

(74) Yan-il-ich t?ajat ti tsi?-nek jeche? an kwitol
many-enum-post very prep come-perf this the boy

an ti mat tumin xo? yab-ich ne?ech ku pid-a?.
the prep borrow money now neg-post go 1-3 give-nonp

'This boy has already come many(times) to borrow money; now I'm no longer going to give him any.'

Other examples of suffixation on cardinal numerals include:

(75) An t?oj-nal-tsik xi exom ti chix-il yaba? u
the work-?-pl rel prog prep hoe-antip neg 3pl

jil-ax. Jun-unul u kal-el ban k?adil.
get behind-ant one-man(?) 3pl out-pres in furrow

'The workers who are hoeing do not get behind. They go out evenly in the furrows.'

3.3.2.2 Repetition. Repetition is found frequently in Huastec discourse and when it involves numbers is used to express succession of equal groups, e.g. one-by-one, two-by-two, two at a time, etc.

(76) a. Chab-tsik (ti) chab-tsik ka tsi?-d-a? an
two-pl (prep) two-pl 2-3 come-caus-nonp the

t?ujub xi yab lej pak-da?
rock rel neg very big-colpl

'Bring two stones at a time which are not very big.'

b. Chab ti chab ka tsi?-d-a? an t?ujub xi yab
two prep two 2-3 come-caus-nonp the rock rel neg

lej pak-da?
very big-bolpl

'Bring two stones at a time which are not very big.'

As (76) shows, the preposition **ti** is optional when the plural morpheme **-tsik** is added. Interestingly, this may also be attached to **jun** 'one':

(77) a. jun-tsik (ti) jun-tsik ka tsi?-d-a? an
one-pl (prep) one-pl 2-3 come-caus-nonp the

t?ujub xi yab lej pak-da?.
rock rel neg very big-colpl

'Bring one stone at a time, etc.'

b. jun ti jun...
'Bring one stone at a time, etc.'

These adverbial phrases of numerals are also encountered sentence finally, as (78) shows:

(78) An animal-tsik o -d -a b an arka chab ti chab
the animal-pl enter-caus-nonp in the ark two prep two

or- chab-tsik (ti) chab-tsik.
two-pl (prep) two-pl

'The animals were caused to enter the ark two by two.'

3.3.2.3 **-tsik** 'pl' and quantification. It is noted at various points in this paper that numerals and other categories may bear the suffix **-tsik** 'pl'. We also note above in Sect. 2 that this use of **-tsik** may affect the interpretation of the predication of a clause in a manner similar to quantifier scope variation as in English:

(79) two men sold two pigs.
some some
the the
etc. etc.

(79) may take (among others) one of the two interpretations in (80):

(80) a. (i) For two pigs there are two men who sold them.
(ii) x (x=set of two pigs), y (y=set of 2 men)
(y sold x)

b. (i) For two men, there are two pigs which they sold.
(ii) y (y=set of 2 men), x (x=set of two pigs)
(y sold x)

Huastec has a rather interesting way of resolving this ambiguity (although this option is not always chosen). **-tsik** may be used on the verb to indicate mutiple actions/events. For example, compare the translations in (81)-(83).

(81) Chab i inik(-tsik) in nuju
two indef man(-pl) 3-3 sell(nonp)

an / i olom(-tsik).
the/indef pig(-pl)

'Two men sold the/some pigs.'

(81) has only the interpretation corresponding to (80a) above. Note that either **inik** 'man' or **olom** 'pig' may accept the suffix **-tsik** 'pl', without forcing a change in the translation. Now compare (82) and (83):

(82) in nuju-tsik an /i olom(-tsik)
3-3 sell-pl the /indef pig(-pl)
(i) 'They sold the/some pigs.'
(ii) 'Each of them sold the/some pigs separately.'

(83) Chab i inik(-tsik) in nuju-tsik an/i olom(-tsik).
'Each man sold the/some pigs separately.'

Thus according to APE, (81) and (83) are not ambiguous, each having the reading indicated. The ambiguity of (82) might be explained by the hypothesis that the lack of an overt agent allows the **-tsik** on the verb to refer either to some discourse specified subject, producing interpretation (i), or to the action itself, resulting in (ii). In (83), however, the **-tsik** is obligatorily noncoreferent with the overt subject.[10] (The **-tsik** may not occur on **chab** 'two' either, for reasons we believe to be related to our suggestions in (8)).

Although these facts are not directly related to numerals in Huastec, they reveal some suggestive aspects of syntactic number and quantification in "logical form" in Huastec (cf. Everett (this volume) for an introduction to logical form).

3.3.2.4 Co-occurrence of numerals and demonstratives. We note in the introduction to this section that demonstratives and numerals occupy the same syntactic position in the NP and, therefore, would not be expected to co-occur. There is a way to circumvent this restriction, however, as (84) indicates:

(84) (xi) nu? xi chab an bitsim
(rel) that rel two the horse
'those two horses'

In (84) the relativizer **xi** is used to allow the demonstrative **nu?** and the numeral **chab** 'two' to co-occur. While the first **xi** is optional, the second is obligatory. Further investigations are necessary to determine the properties of the relative construction so formed, as well as the presence of the definite article **an** following the numeral. We have no answer presently to this exception to our general statement that only **i** 'indefinite' may follow a numeral.

3.4 Articles

There are two articles in Huastec, **an** 'definite' and **i** 'indefinite'. In this section we discuss some of the facts concerning their distribution and restrictions, again noting that this is only a partial, initial listing.

The basic uses of these articles may be seen in (85) and (86):

(85) N a Juan in chu?u an pik?o?.
the hon John 3-3 see(nonp) the dog
'John saw the dog.'

(86) N a Juan in chu?u i pik?o?.
the hon John 3-3 see(nonp) indef dog
'John saw a dog.'

However, there are various restrictions on the use of these articles. For example, **i** may not appear sentence initially or following the relativizer **xi**:

(87) An olom-tsik wat?ey t in tamet an wi?leb.
the pig-pl pass:by(nonp) prep ppro front the door
'The pigs passed by the door.'

(88) * I olom-tsik wat?ey t in tamet an wi?leb.
indef
'Some pigs passed by the door.'

(89) * I ch?ichin-tsik exom ti ajat b an te?.
indef bird-pl prog 3-3 sing prep the tree
'Some birds are singing in the tree.'

Compare (90) and (91):

(90) An ch?ichin-tsik exom ti ajat b an te?.
the bird-pl pres-pro 3pl sing prep the tree
'The birds are singing in the tree.'

(91) Wa?ach an /i ch?ichin-tsik xi exom ti
focus the /indef bird-pl rel prog 3-3

ajat b an te?.
sing in the tree

'There are birds which are singing in the tree.'

(90) shows that the definite article may occur sentence initially with no ungrammaticality, to the contrary of the indefinite. (91) shows that in an almost identical construction where i is not in sentence initial position no ungrammaticality is produced.

(92) and (93) show that the indefinite may not occur after xi 'relativizer' + numeral:

(92) xi jun an/*i piko?o? chemech.
rel on the/a dog die(nonp)
'The/*A one dog died.'

(93) xi chab an/*i piko?o? chemech.
'The/*some two dogs died.'

That this is a restriction related to this particular sequence and not either item individually is shown by (94) and (95), where we see that, in fact, only the indefinite may follow numerals when xi is not present (cf. also (96)):

(94) jun i/*an pik?o?
*one/a /*the dog

(95) chab i/*an piko?o?
(*the) Two dogs.

While either **i** or **an** may follow a demonstrative when the head noun is plural, only **an** is used with a singular head noun:

(96) a. xi je? an /*i bitsim ne?ech ku k?apu-n-d-a?.
rel dem the/*indef horse go 1-3 eat-?-caus-nonp
'I'm going to feed this horse.'

b. xi je? an/i bitsim-tsik ne?ech ku kapu-n-d-a?.
rel dem the/indef horse-pl go 1-3 eat-?-caus-nonp
'I'm going to feed these horses.'

There are various other restrictions on the use of these articles as well as conditions which demand their use. A discussion of these goes beyond our knowledge of the language at present, and so we leave these for future research.

Before closing this section, however, we describe the facts of article contraction with honorifics and personal pronouns. Only the definite article undergoes this process which is just deletion of initial /a/ when the article is followed by an honorific or possessive pronoun:

With possessives:

(97)

an + u	'my'	nu
a	'your'	na
in	'his/her/their/its	nin
i	'your(pl) ours	ni

With honorific **a**:

(98) an + a na

3.5 Clitics, honorific a, and prepositional case markers

This section is merely a preliminary listing of some phenomena which we would like to know more about. As such it presents some basic facts with little analysis.

3.5.1 Clitics. There are four pronominal clitic possession morphemes in Huastec:

(99)

u	'my'
a	'your'
in	'his/hers/their/its'
i	'your(pl)/our'

These appear frequently throughout this paper and therefore no further exemplification is given.

3.5.2 Honorific. a 'honorific' occurs with all proper nouns as well as **ich?** 'moon', **k?itsa** 'sun', and occasionally with **Dios** 'God'. Although **a** also occurs with **Cristo** 'Christ', it does not occur with **ajatik** 'lord' (**ajatik** when used of Christ is always possessed: **(i) ajatik** (our) 'Lord'). Some examples are:

(100) u ul tam enche? max ja?ich a Dios
1-3 say(nonp) then thus if that hon God

in le? bel tikin lo?o
3-3 want still 3-1 save(nonp)

'Then I said thus, "If that way God still wants to save me..."'

(101) alwa? pik?o? jun t?a ti kale n a Duke
good dog one very prep turnout the hon Duke

abal ti belkol ata
sub prep take care of house

'Duke turned out to be a very good dog for guarding the house.'

3.6 Modifiers

3.6.1 Stative verbs A full account of the Huastec NP should include a discussion of stative verbs as well as adjectives since both may appear as NP internal modifers. However, there is still too much we do not know about these to discuss them here besides the fact that they may appear in pre-article or post-head positions whereas adjectives may only appear in pre-head position within the NP. According to APE, in almost every instance of modification, the stative verb option is preferred.

(102) Pulek n u pik?o?-il.[11]
big(stat) the my dog-poss
'My dog is big.'

(103) Nana? u ko?ol jun u piko?o?-il pulek.
I 1-3 have(nonp) one my dog-poss big(stat)
'I have a big (my) dog.'

In (104) and (105), we see that adjectives may not appear in these positions (here **pulek** is the adjective form with a short vowel. cf. note 10).

(104) * Pulek n u pik?o-il
big(nonstat) the my dog-poss
'my big dog'

(105) * Nana? u ko?ol jun u pik?o?-il pulek
1 1-3 have(nonp) one my dog-il big(nonstat)
'I have a big (my) dog.'

3.6.2 Adjectives. As we note in 3.6.1, the adjective is less used to modify nouns than the stative verb. Further, adjectives are more restricted in their syntactic order, appearing obligatorily in pre-head position.

(106) Tikin pak?w-tsi n u chak xeket.
2-1 wash-appl the my red shirt
'Wash my red shirt.'

(107) u dak bitsim
my white horse
'my white horse'

Other examples are to be found throughout the paper.

3.7 Relative clauses

We organize our discussion here around the two kinds of relative clauses in Huastec, the "normal" relative and the cleft construction, marked by **ja?ich** 'this one'. The basic justification for positing two classes of relatives, besides the pressure of **ja?ich** is the fact in cleft relatives only the subject of the embedded clause can be focussed cf. below for more details.

3.7.1 Nonclefted relatives. Nonclefted relatives have the structure NP - S with the basic interpretation "NP who...".

(108) An inik x in chu?u n a Juan
the man rel 3-3 see(nonp) the hon John

ja?ich n u kidab.
that one the my brother

'The man who saw John is my brother.'

(109) an inik xita? in chu?u n a Juan
the man rel 3-3 see(nonp) the hon John
'the man who John saw'

Note the difference in relativizers between (108) and (109). Although more investigation of **xi** and **xita?** and their distribution is necessary, **xita?** does seem to be the preferred (only?) way of marking object relativization.[12] It is noted below, however, that **xita?** and **xi** may in fact co-occur in some situations.

Since we are unable to provide any further details of nonclefted relatives other than these elementary observations, we move on now to clefted relatives which do provide a means for better understanding relatives in general.

3.7.2 Clefted relatives. In Huastec the demonstrative **ja?ich** 'this one' may be placed before or after the head of a relative clause to produce an effect of focus like the following:

(110) Ja?ich -NP- S or NP, Ja?ich - S
'It was NP who...'

For this reason we have labelled this type of relative a clefted relative. More examples include:

(111) a. Ja?ich n a Juan x in chu?u an pik?o?.
this one the hon John rel 3-3 see(nonp) the dog
'It was John who saw the dog.'

b. N a Juan, ja?ich x in chu?u an pik?o?.
the hon John this one rel 3-3 see(nonp) the dog
'It was John who saw the dog.'

Note in (111) that when the NP precedes **ja?ich**, it must be followed by pause. Other variations of form encountered, and generally are related to the type of relativizer(s) involved. In (112) and (113) two different sets of possibilities are listed, the a-c examples reflecting decreasing order of preference.

(112) a.?? N a Juan ja?ich xita? x in chu?u
the hon John this one rel rel 3-3 see(nonp)

an pik?o?.
the dog

'It was John who saw the dog.'

b.? N a Juan ja?ich xita? in chu?u an pik?o?.
the hon John this one rel 3-3 see(nonp) the dog
'It was John who saw the dog.'

c. N a Juan ja?ich x in chu?u an pik?o?.
the hon John this one rel 3-3 see(nonp) the dog
'It was John who saw the dog.'

(113) a.?? N a Juan ja?ich xi chu?-tat k?al an pik?o?.
the hon John this one rel see-pass by the dog
'It was John who was seen by the dog.'

b.? N a Juan ja?ich xita? chu?-tat k?al an pik?o?
the hon John this one rel see-pass by the dog
'It was John who was seen by the dog.'

c. N a Juan ja?ich xita? xi chu?tat k?al an pík?o?.
the hon John this one rel rel see-pass by the dog
'It was John who was seen by the dog.

First, note that in clefted relatives, as opposed to non-clefted, only subjects may be relativized. Thus to relativize an object, a passive rule must apply for the clefted relative to be grammatical. Thus cf. the passive marking on the verb of the relative clause (113) with the active marking in (112).

An intriguing fact is the exact opposite orders of preference for relative marking found in (112). A likely hypothesis is that we might link the different underlying grammatical roles of **Juan** in (112) and (113) with the relativizer differences. Remembering that **xita?** is preferred with relativized objects and **xi** with relativized subjects we can understand the preference for **xi** in (112). But then why is **xita? xi** preferred in (113)? Our speculation is that this double relative marking represents a recognition of the fact that the relativized element bears two grammatical functions simultaneously - underlying object and superficial subject.[13] Under this assumption all the preferences are straightforwardly explained: (112a) would be strange since **Juan** only bears one grammatical function at all "levels", that of subject. (112b) uses an object relativizer and is thus also less preferable than (112c) in which **Juan** is marked unambiguously as subject. However, (112b) might be superior to (112a) because it claims correctly that **Juan** only bears one grammatical function to the clause. This reasoning then would apply in an obvious fashion to (113).

3.8 Case marking

We begin once again by noting that a great deal of what we believe to be occurring in Huastec cannot be mentioned due to the elementary stage of our knowledge. Especially interesting is the prepositional case marker **ti**. Nonetheless, we must content ourselves with the following listing of various cases which we do have some controlled data on:

Benefactive:

(114) U t?aja? abal n a Guillermo.
1-3 do(nonp) sub the hon William
'I did it for (the benefit of) William.'

Source:

(115) U ach?a? ba n a Guillermo.
1-3 hear(nonp) from the hon William
'I heard it from William.'

Instrument:

(116) U cha?aw k?al jun i martillo.
1-3 hit(nonp) with one indef hammer
'I hit him with a hammer.'

Negative instrument:

(117) a.??U t?aja?, yab k?al (jun) i martillo.
1-3 build/do(nonp) (neg) with one indef hammer
'I built it, without a hammer.'

b.? Yab k?al (jun) i martillo u t?aja?.
neg by one indef hammer 1-3 build/do(nonp)
'I built it without a hammer.'

c. Yab u t?aja? k?al (jun) i martillo.
neg 1-3 do/build(nonp) with one indef hammer
'I built it without a hammer.'

Comitative

(118) In k?ale k?al n a Guillermo.
1 go(nonp) with the hon William
'I went with William.'

Negative comitative

(119) Yab in k?ale k?al n a Guillermo.
neg 1 go(nonp) by the hon William
'I did not go with William.'
'I went without William.'

Circumstance

(120) Jaja? jun i inik, x in ko?ol in k?ima?
he one a man rel 3-3 have(nonp) 3 home
'He is a man with a home.'

Negative circumstance

(121) Jaja? jun i inik, xi yab in ko?ol in k?ima?.
he one a man rel neg have(nonp) 3 home
'He's a man without a home.'

Quality

(122) Jun i inik xi (yab) u k?ak?na-x.
one indef man rel neg 3 honor-antipass
'A man with(out) honor.'

Reference quality

(123) in k?ak?na-x-tal an inik
his honor-ant-poss the man
'the honor of the man (the man's honor)'

Reference quantity

(124) Jeche? i kamion in alts'ik ox i toneladas.
this a truck its weight three indef tons
'The weight of this truck is three tons.'

Alienable vs Inalienable possession
No distinction

Temporary vs Permanent possession
No distinction

Present vs Past possession

(125) Jeche? an ata ja?ich n u k?ima? wi?ik.
this the house this one the my house formerly
'This (is the) house (that) used to be mine.

Material

(126) Jun i ata t?ajad k?al i te?.
one indef house made(stat,nonp) by indef wood
'a house made of wood'

Negative material

(127) Jeche? an ata t?ajad yab k?al i te?.
this the house made(stat) neg by indef wood
'This house is not made of wood.'

Manner

k?al in chakub.
by his anger
(128) Jaja? in cha?aw
3 3-3 hit(nonp)
(abal) u chaku-l.
(sub) 3 anger-intr
'He hit him in anger.

Negative manner

k?al in chakub.
by his anger
(129) Jaja? in cha?aw yab
3 3-3 hit(nonp) neg
(abal) u chaku-l.
(sub) 3 anger-intr
'He hit him without/not in anger.'

Cause

(130) Jaja? in t?ek?a? tinba? k?al in chakub an mim-lab
3 3-3 upset(nonp) reflex by his anger the lady
'He was upset by the lady's anger.'

Purpose

(131) Nana? u eyna? jeche? abal n u t?oj-lab-il.
1 1-3 use(nonp) this sub the my work-nom-poss
'I used this for my work.'

Function

(132) Nana? u eyna? jun i t?ujub abal ti martillo.
1 1-3 used one indef rock sub prep hammer
'I used a rock as a hammer.'

Reference

(133) N u ichan tin t?il-tsi an ti pejex-ta-lab
the my uncle 3-1 told-appl the prep fight-instr-nom
'My uncle told me about the war/revolution.'

Essive

(134) Jaja? k?awajat wi?ik lab-tom ti t?ojnal.
3 be formerly Mexico City prep worker
'He used to be in Mexico City as a worker.'

Translative

(135) I bijiy ti ok?lek.
we named(nonp) chief
'We named (elected) him as chief.

Part-whole

(136) in ok? an pik?o?
3 head the dog
'the head of the dog'

Part - number

(137) chab ti eb (xi) an kwitol-tsik
two prep among (rel) the boy-pl
'two of the boys'

Part - quantifier

(138) chab-ox ti eb (xi) an kwitol-tsik
two-three prep among (rel) the boy-pl
'some of the boys'

Part - negative quantifier

(139) ni jun (xi) an kwitol-tsik
neg one (rel) the boy-pl
'none of the boys'

Nonpart - negative quantifier

(140) ni jun i kwitol
neg one a boy
'no boys'

Price

(141) U ch?a?ay k?al jun inik i peso.
1-3 buy(nonp) with/for one man indef peso
'I bought it for twenty pesos.'

Value

(142) Jun i ata x in jalb-il jun million i peso.
one indef house rel 3 price-poss one million indef pesos
'A house worth one million pesos.'

Distance

(143) In at-lach chab i kilometro.
1 fast-nonp two indef kilometer
'I ran two kilometers.'

Extent

(144) jun i pulek ata laju i metro in t?ek?-il
one a big house ten a meter 3 height-poss
'a building ten meters high'

Concessive

(145) Tsich n a Juan aba an ab.
come(nonp) the hon John inspite:of the ran
'John came in spite of the rain.'

Inclusion

(146) Tsich ejtal ti eb aniy jey n a Juan.
come(nonp) all prep among also emph the hon John
'Everyone came including John.'

Exclusion

(147) Tsich ejtal tokot n a Juan yab tsich.
come(nonp) all only the hon John neg come(nonp)
'Everyone came except John.' (lit. 'Everyone came, only John did not come')

Addition

(148) kale an presidente ani ox i belal-tsik
leave(nonp) the presidet addition 3 indef walker-pl
'Three people, in addition to the president, left.'

4 Pronouns

There are independent personal, emphatic and reflexive pronoun paradigms in Huastec. In this section we will merely list them with a few comments since we have not yet studied these in any detail.

4.1 Personal pronouns

Huastec independent personal pronouns may occur in full or abbreviated form, according to the following table:

	BASIC	ABBREVIATED
1	nana?	na(?)
2	tata?	ta(?)
3	jaja?	ba(?)
3'	baba?	ba(?)
11	wawa?	wa(?)
22	xaxa?	xa(?)
33	jaja?tsik	ja(?)
33'	baba?tsik	ba(?)

Table 1[14]

4.2 Emphatic personal pronouns

As with nonemphatic pronouns, the emphatic pronouns have both a long and a short form, seen in the following table:

	BASIC	ABBREVIATED
1	neye	ney
2	teye	tey
3	jeye	jey
3′	beye	bey
11	weye	wey
22	xeye	xey
33	jeye	jey
33′	beye	bey

Table 2

Emphatic forms may never occur sentence initially, as seen in the contrast between (149) a and b.

(149) a. Anchan? ney t u kul-bet-n-al.
that:way emph prep 1-3 like-?-?-pres
'I like it **that** way.'

b.* Ney anchan? t u kul-bet-n-al.
emph that:way prep 1-3 like-?-?-pres
'I like it that way.'

5 Conclusion

This brief and in many places all too superficial sketch of Huastec noun phrases is meant to serve as a guide for future research on Huastec itself as well as provide initial documentation of this language for specialists and others interested in Mayan languages in general or Huastec in particular. We have attempted, therefore, to survey the basic features of noun morphology, noun phrase structure, and pronoun paradigms.

Notes

1. The Veracruz dialect of Huastec has approximately thirty thousand speakers, the San Luís Potosí dialect slightly more. The dialect of Veracruz is spoken primarily near the city of Tantoyuca. However, there are apparently two other subdialects, one in Tantoyuca and another spoken in the area of Chontla.

The responsibility for this paper is divided among the authors in the following way:

The first named author, a native Huastec speaker, is the primary language consultant, and has provided approximately fifty percent of the data for this paper, as well as checking and discussing the remainder of the examples used here.

The second author is responsible for the prose, organization of examples and issues, as well as a large percentage of the analysis presented.

The final author is the primary field worker among the Huastec and responsible for some eighty percent of the analysis presented, as well as some of the prose.

The second author was supported in part during the writing of this paper by a fellowship from the American Council of Learned Societies with funds from the U.S. Dept. of Health, Education, and Welfare, as well as other sources.

2. Abbreviations used in this paper are: ant - antipassive; , col - collectivizer, det - determiner, genr - generic, hon - honorific, indef - indefinite, nclas - noun classifier, nom - nominalizer, nonp - nonpresent, pos - possessive, pret - pretransitional, pospro - possessive pronoun, pur - purpose, quan - quantifier, tr - transitive, ver - verbalizer, man - manner.

3. This use of -lom with animals, with a translation as in (*23b) is found, however, in the San Luís Potosí subdialect.

4. The constant acoustic correlate of what we refer to as (primary) stress in Huastec is intensity.

5. Since stress and vowel length are peripheral to the present description we have not represented either in this paper, other than the examples given. We are in the process of making amends for this lacuna here by reviewing nouns in Huastec for length and stress, which will be marked in future work.

6. An alternative would be to consider quantifiers a subclass of nouns since they overlap in distribution, as quantifiers may occupy subject or object position in the clause:

(i) witsich ejtal t in k?ima?.
return(nonp) all(Q) prep 3 house
(a) 'Everyone returned to his house.'
(b) '(They) all returned to their houses.'

(ii) u le? tikin pid-a? we?.
1-3 want 2-1 give-nonpres a little(Q)
'I would like you to give me a little.'

However, quantifiers may not take any other nominal affix other than **-tsik** and thus differ from other nouns morphologically. Further, only quantifiers may occur between pronominal clitics and verbs, only quantifiers may appear in posthead position in NP, only quantifiers may appear in sentence initial position preceding a temporal expression, etc. Thus on the basis of these morphological and distributional distinctions, in spite of the distributional overlap between quantifiers and nouns in subject and object positions, we maintain that quantifiers are best treated as an independent category cf. the text for further exemplifications.

7. This list is intended to be representative rather than exhaustive.

8. cf. Baltin (1982).

9. However, **-tsik** is not necessary to get a plural interpretation. All of these forms may appear with a plural interpretation and in fact frequently have a plural interpretation while disallowing the use of **-tsik**. We have nothing to say on this except that it demands study.

Note, too, that **nu?** looks suspiciously like the short form of **nuwa?** and would balance out the paradigm if it were. The historical development of **nuwa?** has resulted in the short form being used for short distances and the larger form for larger distances. The temptation to invoke analogy as a partial explanation is strong.

10. Although such considerations go beyond the scope of this paper, it is interesting that this **-tsik** behaves similarly to a pronominal element subject to the "Binding Conditions" of Chomsky (1981), 1982). See Everett (this volume) for an introduction to the Binding Conditions.

11. Stative verbs are frequently distinguished from adjectives by vowel length and stress. Once again we apologize for not including length in our representations due to our lack of understanding the phonological role of length in Huastec. cf. **pu:lek** 'it is big' and **Pulek** 'big'.

12. Compare this to interrogatives:

(i) Jita? x in ?hu?u n a Juan
who(inter) rel 3-3 see(nonp) the hon Juan
'Who saw John?'

(ii) Jita? in chu?u n a Juan
who(inter) 3-3 see(nonp) the hon Juan
'Who did John see?'

13. We might also mention that these examples might provide some evidence in favor of a theory such as Government and Binding Theory which predicts that a NP may bear more than one grammatical simultaneously over a theory such as RG which does not.

14. It appears that **baba?/ba?/baba?tsik/ba?** and also **beye/bey** have all but died out.

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EVIDENCE FOR A YAGUAN-ZAPAROAN CONNECTION*

Doris L. Payne

1 Introduction
2 Shared lexicon
3 Phonology
4 Noun classification
5 Constituent order
6 Verbal morphology
7 Conclusions

1 Introduction

This paper examines preliminary evidence regarding the type of relationship obtaining between Peba-Yaguan and Zaparoan languages. My tentative conclusions are that certain features shared by the Peba-Yaguan and Zaparoan families may be due to a genetic connection, though independent origin cannot be ruled completely out. These features include phonological phenomena, certain transitivity-related verbal suffixes, and postpositional counterparts of some such suffixes. Other shared features appear to be areal characteristics, pointing to extensive contact between a number of languages prior to recorded history. These features include noun classification systems and movement and locational verbal morphology. Other features which may or may not be indicative of a (western) Amazon linguistic area, and for which I simply lack adequate data on the Zaparoan family, include use of nouns as descriptive modifiers rather than a syntactically distinct class of adjectives or stative verbs, verb-initial plus postpositional structure, infrequent use of any noun phrases in discourse, and verbal morphological organization which does not easily lend itself to a position-class approach. The entire picture is confounded by apparent lack of significant shared lexicon between Peba-Yaguan and Zaparoan, either from a single genetic origin, or via borrowing. However, since no attempts at reconstruction within either language family have ever been made, the lexical question must remain open for the present. The preliminary nature of the conclusions drawn in this paper is emphasized.

By way of general introduction to the situation, Greenberg (1960) proposes two major phyla for most of South America: Andean-Equatorial, and Ge-Pano-Carib. The Zaparoan family, along with Cahuapanan, are claimed to constitute one of the five major subgroupings which make up the Andean division of the Andean-Equatorial phylum. Other Andean-Equatorial representatives in the area include Tucanoan, Tupi-Guaraní, and Arawakan languages, all members of the Equatorial division. Peba-Yaguan is supposedly one of the major branches of Macro-Carib, along with Witotoan and Carib. Macro-Carib is in turn a member of the Ge-Pano-Carib phylum. In this paper I will not take it for granted that Greenberg is correct. But even if there should prove to be no genetic relationship between Peba-Yaguan and Zaparoan, we are still challenged to find an explanation for the perceived similarities.

Zaparoan languages include Iquito, Andoa (also referred to as Shimigae), Arabela, Záparo, Cahuarana, and the now-extinct Coronado. For the most part these languages are located in northwestern Peru, but some extend into southeastern Ecuador as well. It has been hypothesized that Taushiro is also Zaparoan (Natalia Alicea, personal communication), but if so, it is quite divergent from the others. Greenberg (1960) suggests that Waurani or Auca (Ecuador) and Omurano (Peru) are Zaparoan, but he provides no evidence for this relationship. Costales (1975) also claims that Auca is Zaparoan, but Catherine Peeke (personal communication) sees little or no evidence for this. In this paper, I will restrict discussion of the Zaparoan languages to Iquito, Andoa, Arabela, and Záparo.

Costales (1975) suggests that, around the end of the seventeenth and beginning of the eighteenth centuries, there were some 98,500 speakers of Zaparoan languages. Today there are almost certainly less than 500 (Iquito ca. 100-200, Cahuarana ca. 4, Arabela ca. 150, Andoa-Shimigae 1 or 2, Záparo ca. 200, Taushiro 6--if indeed it is Zaparoan). This dramatic decrease in population is due to to at least two factors: harassment and decimation by colonial powers, and inter-tribal conflict. The following information from Roland Rich (personal communication) concerning the Arabelas is suggestive of their history:

> 'Around the turn of the century (1900), the Arabelas were subjected to much harassment and were captured and forced to work rubber for Ecuadorians. They escaped a number of times, but always in the general area between the Arabela river, the south side of the Curaray, and (northwest of there). Evidence for this is that Alcides, a man perhaps in his sixties, immediately recognized pictures of Aucas (Waurani) as **mococori**, said with awe and fear. The Mococori had attacked his ancestors, killing without mercy even women and children. Evidence for very long residence in the general area they are still in is from the fact that the other three languages of the Zaparoan language family are on three sides of them: the Shimigae, or Andoas group, are on the Pastaza at Andoas to the southwest by west... The Zaparos lived on the Cononaco to the northwest, and the Iquitos [lived] on the Nanay headwaters (Pintoyacu) to the southeast... The Arabela contact with outsiders was with Quechua speakers from the very beginning... the Arabelas learned Quechua quite well, but knew practically no Spanish when we arrived November 1, 1954.'

Based on conservative linguistic features, Stark (1976) suggests that the original seat of the Zaparoan family was further to the southeast towards the present-day city of Iquitos:

> 'Al comparar los idiomas que se hablan cotidiana podemos concluir que Iquitos y Cahuarana, los que comparten más semejanzas entre sí que entre los otros idiomas Záparos, representan una rama más o menos conservadora de la familia linguística Zápara. Estos datos dan a entender que la familia emanaba de la región de Iquitos, donde hoy día

> encontramos las lenguas Iquitos y Cahuarana. Esta idea se sustenta en los cuentos folklóricos que indican que los antepasados de los záparos provenían de las márgenes del Marañon. Hablantes del idioma se difundieron desde esta área iquiteña hacia el noroeste por el río Tigre estableciéndose en concentraciones en los alrededores de la cabecera, donde todavía existen pocas personas que hablan Andoa-Shimigae y Arabela aun hoy día.'

The Peba-Yaguan family earlier consisted of at least three languages: Peba, Yagua, and Yameo, of which Peba and Yameo are now almost certainly extinct. Chaumeil (1981) documents migrations of the Pebas and Yaguas from the end of the seventeenth century. Based on Jesuit documents, he suggests that the original home area of the Pebas extended from north to south between the Putumayo and Amazon Rivers, and from east to west between the present-day town of Pebas and the Ampiyacu River. The Yaguas (also called Yavas) were probably north of the Pebas region, overlapping significantly with the area presently occupied by the Boras (purportedly Witotoan). Thus, the original home area of both the Pebas and Yaguas was east of the original home area of the Zaparoan family. However, colonial records dating from the 1600's (cf. Espinosa 1955), indicate that the Yameos were located west of the Amazon just upriver from Iquitos. Thus, the Yameos were roughly in the same area as, or possibly bordering on, the Iquito (Zaparoan) region. Based on personal field work probably in the 1940's, Espinosa (1955) reported a group of less than 50 Yameo speakers still located between the confluence of the Marañon and Ucayali Rivers, and the city of Iquitos.

Colonial sources (cf. citations in Espinosa 1955 and Chaumeil 1981) report that migration of the Peba-Yaguas during the seventeenth and eighteenth centuries occurred under the influence of inter-tribal wars, movements to and from Jesuit missions, and epidemics. During this period, conflict between Portugal and Spain spilled over into Portugese attacks on Spanish missions in the New World, particularly affecting groups along the Amazon River. The Omaguas and Yurimaguas (Tupí-Guaraní) were practically decimated. The Yaguas were affected to a much lesser extent, as they kept to the forests rather than the larger rivers where the missions were located. However, as with the Arabelas and other Zaparoan groups, during the nineteenth and twentieth centuries the Yaguas experienced significant migrations as they sought to escape **patrones** who wanted (often forced) labor for cutting lumber and extracting

rubber. As a result, today the Yaguas are found scattered between the border of Peru with Colombia on the east, and the city of Iquitos on the west. It appears that their extension to the area of Iquitos is relatively recent. In this paper, Yagua data comes from three dialect areas: San José de Loretoyacu, near the Colombian border; Cahocuma, east of Pebas near the Amazon river; and Vainilla, closer to Iquitos at the confluence of the Napo and Amazon rivers.

2 Shared lexicon

Based on mass vocabulary comparison, Rivet (1911a) suggests that Peba-Yagua is part of the Carib grouping. This claim is founded on the discovery of some 47 lexical items which could be construed as cognates with lexical items from Carib languages, including 12 terms for body parts, 5 kinship terms, and 10 terms for 'eléments et nature'. His count is not based on lexical items from any one Carib language, but from 38 languages (cf. Rivet 1911b). In contrast, he finds only 21 lexical items which could be construed as cognates with Zaparoan terms, including six terms for body parts, two kinship terms, and four terms for 'eléments et nature'. More recently, Paul Powlison (personal communication) has dismissed the possibility of a genetic relationship between the two families, apparently based on lack of significant, obvious cognates. However, there are some lexical similarities, as perusal of Zaparoan data found in Eastman and Eastman (1963), Peeke (1959), Rich (1963), Stark (1976), and my personal field notes on Yagua indicate. The following list is not based on careful nor extensive study of the materials available, and is merely suggestive. (Nothing resembling a dictionary or word list is currently available for Andoa, Iquito, or Arabela.) **-ki**, **-ka**, **-nu**, **-ni**, and **-no** endings on Zaparoan words are generally suffixes. **j** = /h/.

	Andoa	Iquito	Arabela	Záparo	Yagua
'above, high'				náwka	náąwáy
'another'		taana			taa(ra)
					taa(nų)
'bathe'	naana		nana		jųnąnąy
'before'		taarnáyaa	tari		tąąriy
'blow'	náuta		nooniu		nuu
'breast'				kítiaja	
'milk'					jítyąja
'bird'				píšiaka	wíčiy
'bite (chew)'	saká		saiy/soko	tsáynu	suuy
'blood'				nánaka	nuna
'canoe'		íímina			jumųñų
'carry'			poonu		púúchiy
'cold'	sina		siiná		sáánora
'come'	jųniy				niníų
'daughter'				niyátu	neetu
'to drink'	rato		ratu	ratúnu	jatu
'ear'				táwerekau	tuwáąy
'eat'			miakenu		jimyíy
'to feed'				mwítinu	
'hammock'		ináási			jníy
'lie down, sleep'	oma	maa		makwínu	mąąy
'manioc'		asúraaja			jásuučee
'morning'		taríki		tarakááki	tąąrimyųsiy
'tomorrow'				tareká	tąąrimyųsiy
'new'		sáámina		tsámika	sámirya
'one'		núúkiika		núkaki	tá kií
'to plant'		naanáta (3pl)			nutá
'run away'	masi		masi	asínu	mąąsiy
'flee'				masínu	
'rain'			maru	úmaru	rúmąra
'road'				nuukáma	núú
'shoulder'				nématu	nųmutó
'son'				niyánu	neenų
'star'				nárikia	naričíy
'to stick'			rupohonu		rúpa
'throw, to spear'			jia	ajátanu	jay-siy
'tree, pole'		nan			nínų
'tucan'	núpa				núwa
'very'		júúra			jááryiy
'want'	pani				wąąta
'1plural/ dual'	p-, pay-	pui-, pa-	pa-		wųųy-, wuuy-
'3rd person'	na-, n-	nuu			níí, sa-

Critical study of sound correspondences has not yet been undertaken for the Zaparoan or Peba-Yaguan families, much less investigation of consistent correspondences between them. Initially, there is some suggestion of a regular sound change between Yagua /w/ and Zaparoan /p/, as in the items for 'bird', 'toucan', 'want', and the first person plural or (Zaparoan) dual prefixes. Pending research of this sort, we cannot definitively claim that lexical correspondences do not exist. However, the number of obvious potential cognates is small and accidental correspondence cannot (yet) be ruled out. Additionally, study is necessary to show that lexical similarities are not due to mutual borrowing from Omagua, Cocama, or other languages of the area. The only possible Quechua cognate in the above list is that for 'bird' which corresponds to Quechua **pisko** (David Weber, personal communication).

3 Phonology

There are striking phonological similarities between Yagua and the Zaparoan languages. Paul Powlison (personal communication) anecdotally reports that upon one occasion a number of Arabela and Yagua speakers had opportunity to be together. They felt they should be able to understand one another since the languages 'sounded' so much alike. They soon found, however, that they could not. There are at least four features accounting for such perceived similarity. The first concerns intonational and pitch phenomena. In the speech of some Yaguas and consistently in Arabela, Iquito, and Andoa, there is a strong phrase-final high pitch accompanied by a phrase-final glottal closure. Exact placement interacts with lexical pitch or tone. Arabela has a rather complicated pitch-accent system (F. Rich 1981), and Yagua falls somewhere between a classical two-tone register tone system and a pitch-accent system. Iquito (Eastman and Eastman 1963) is described as a two-tone system, although it very well may be a pitch-accent system. I do not have information on Záparo. It is important to note, however, that many other western Amazon languages also have pitch-accent systems.

Secondly, phonological inventories are strikingly similar. Stark (1976), Eastman and Eastman (1963), and F. Rich (1963) give the following consonant inventories for Záparo, Iquito, and Arabela. The Yagua list is based on Powlison (1962).

Záparo:	/p,	t,	k,	s,	t^s,		š,	č,	m,	n,	r,	w,	y,	x/
Iquito:	/p,	t,	k,	s,					m,	n,	r,	w,	y,	h/
Arabela:	/p,	t,	k,	s	[t^s ?],		š,		m,	n,	r,	w,	y,	h/

Yagua: /p, t, k, s [t^{s}], č, m, n, r, w, y, h/

Ruhlen (1976) lists /t^{s}/ as a phoneme separate from /s/ for Arabela but F. Rich does not do so. Peeke's early field notes (1953) show that Andoa [t^{s}] corresponds to Arabela /s/. In Yagua /s/ is phonetically [t^{s}]. Although I do not have extensive data on all languages of the area, /t^{s}/ or [t^{s}] is found areally south of the Yagua and Zaparoan region in Pre-Andine Maipuran Arawakan (Campa) and Panoan languages (e.g. Capanahua, Cashinawa, Cashibo). It apparently does not occur in Ticuna, Witotoan, and Tucanoan languages. I do not have data on Omagua and Cocama, both Tupí-Guaraní languages. Ruhlen (1976) indicates that Witoto, Ticuna, and Tucanoan (Acaricuara) all have a series of voiced stops /b, d, g/, as well as other divergent sounds: Witoto (Murui) /ǰ, θ, ʂ, β, m̃/, Witoto (Muinaná) /ˀb, ˀd, m̃, ǰ, ʈ/, Ticuna /k^{ʷ}, j, f, m̃/. The consonant system of Ocaina is quite distinctive: /p, t, c, k, b, ɟ, g, t^{s}, d^{z}, ǰ, ɖ, s, š, x, ʒ, β, m, m̄, n, n̄, m̃, ñ, r, h, ʔ/. In Yagua and Arabela combination of /w/ and /y/ results in [ɸ]. However, Peter Landerman (personal communication) reports that [β] is found areally.

Zaparoan and Yagua vowel inventories are also similar. Zaparo has /i, i̇, a, o/, Arabela has /i, i̇, a, u, o/ (my personal field notes), and Yagua has /i, i̇, e, a, u [ʊ] and o [ɔ]/, but /e/ and /o/ are infrequent. In all three languages vowels are both long and short, and in at least Arabela and Yagua, vowels are nasal as well as oral.

A third characteristic feature of both families is metathesis of /y/ and any contiguous word-internal consonant. This results in a series of palatalized consonants and extensive vowel changes. In the Zaparoan languages, a similar metathesis of /w/ with any following word-internal consonant occurs. In Yagua, there is little if any (synchronic) evidence that syllables terminate in /w/, though /m/ and /p/ are frequently labialized syllable-initially when not preceded by a /y/.

Fourth, there is an association between /h/ and nasalization. In Arabela, F. Rich (1963) reports that /h/ has a nasal quality and that all vowels are predictably nasalized following /h/. (However, personal field work, confirmed by Roland Rich, shows that there are at least some lexical items where an oral vowel follows the /h/.) According to Ruhlen (1976) /h/ is nasal in Iquito. In Yagua, deletion of a morpheme-initial /h/ between two short oral vowels results in nasalization of the vowel sequence, or oralization of a nasal sequence. Word-initial /h/'s preceding vowels other than /a/ are characteristically

nasalized, accompanied by deletion of the following vowel. Matisoff (1975) reports the phenomena of 'rhinoglottophilia' for Arabic, Tai, Tibeto-Burman, and other languages. Preliminary work by Aryon Rodrigues suggests that this phenomenon may be found throughout the Amazon area, though the actual extent is as yet unknown (Daniel Everett and Desmond Derbyshire, personal communication). Thus, independent origin of an association between /h/ and nasalization cannot be ruled out.

To summarize this section, there are phonological similarities between the Zaparoan and Yaguan languages. These similarities might be due to contact. But if so, we might expect more evidence of lexical borrowing between the languages. There is nothing particularly odd about the phonological systems, and independent origin cannot be ruled out.

4 Noun classification

A second shared feature concerns noun classification. As reported in Payne (to appear a), Yagua has an extensive system of some 40 noun classifiers. Classifiers (CF) are suffixed to demonstrative roots, and infixed to numerals. There is a native system for counting up to 1,000.[1]

(1) jiñu vánu
jiy-nu
demo-CF:anim:SG man
'this man'

(2) dá-juu-jụy siivada
two-CF:egg-two 3SG:egg
'two eggs (possessed, e.g. by a chicken)'

Classifiers are potentially suffixed to descriptive modifiers, showing concord with the head noun of a noun phrase. However, the neutral classifier **-ra** most commonly occurs on descriptive modifiers when the head noun is present in the noun phrase.

(3) súјay mɨ́ɨ́-jay
cloth dirty-CF:skin:like:item
'dirty cloth'

(4) jąą́ púúrya
púúy-ra
water rot-CF:neutral
'putrid water'

(5) cf. púújɣaą́
púúy-jąą́
rot-CF:liquid
'putrid liquid (possibly water)'

Classifiers potentially occur in predicate nominal constructions to show concord between the predicate noun and the subject noun, as is the case with **-jay** in (6):

(6) Néé jáámu-jay jirya tiryǫ́ǫ́-jay.
jiy-ra
neg big-CF:cloth demo-CF:neutral lie:down-CF:cloth
'This sleeping mat is not a big one'.

The Arabela system does not match up morpheme-for-morpheme with the Yagua system in terms of number of classifiers (see Appendix). Arabela classifiers are not affixed to numbers (there are only three native number terms). They are not used in demonstratives or predicate nominals. They may be used in noun phrases to indicate concord between a descriptive modifier and the head noun, though in a noun phrase where the head noun is present, the ending **-ka** is much more likely on the descriptive modifier than is a specific classifier.

In both Yagua and Arabela, a primary function of classifiers is indication of anaphoric reference within the scope of discourse. The following is a Yagua example, though Furne Rich (personal communication) reports that classifiers are similarly employed in Arabela, suffixed to descriptive modifiers when the head noun is not immediately present in the same clause as the modifier. (**tʃʃkii** apparently derives historically from the proto-form of **tá-nu-kíí**, one-CF:singular:animate-one.)

(7) Pun! Sa-duu-níí nu-ntiy, nu-ntiy.
3SG-blow-3SG another-also another-also

Tʃʃkiidee baayásityée.
tʃʃkii-dee baay-jásiy-tée
one:CF:SG:anim-diminuitive escape-PROX1-emphatic

'"Pun!" He blew him (shot him with a blowgun), another also, another also. Only one little (animal) escaped'.

Additionally, as illustrated for Yagua in (6) above where **-jay** derives a noun from the verb **tiryǫǫ** 'lie down', Arabela classifiers also have a nominalizing function when suffixed

to verb roots (Furne Rich, personal communication). This feature is apparently an areal phenomenon, also characteristic of noun class systems in Tucanoan languages, Preandine Maipuran Arawakan, possibly Bora (Thiessen 1957), and Waurani (classification uncertain, Peeke 1973). As in Yagua, infixation of classifiers to numbers is also found in Bora (which also has native number terms up to 1,000), and in at least some Preandine Arawakan languages (which have only three native number terms). In sum, noun classification appears to be a wider areal phenomenon. It is not found, however, in the Tupí-Guaraní and Panoan languages which intervene between the Preandine Arawakan languages in southern Peru, and the other noun class languages which extend northward from the Amazon river.[2]

Although not clearly part of the noun classification system in Zaparoan or Yagua, **-tu** and **-ryy** are feminine endings in Yagua, and **-tu** and **-ru** are feminine endings in Arabela. **-nu** is a masculine and/or animate singular classifier in Yagua. This corresponds to a **-nu** masculine ending and **-nu** nominalizer in Arabela.

5 Constituent order

According to Greenberg (1966), Hawkins (1983), and others, verb-initial constituent order coupled with postpositional phrases is supposedly a typologically rare combination. As discussed in Payne (to appear, c), however, there are a number of languages in the Amazon area which evidence this combination, including Guajajara (Tupi-Guaraní), Taushiro (classification uncertain, but possibly Zaparoan), Matsiguenga, Nomatsiguenga, Asheninca, Caquinte, Amueshua (all Preandine Arawakan), and Yagua.

To my knowledge, no critical study of constituent order in Zaparoan languages has been undertaken. Identification of basic order of subject, object, and verb in Zaparoan is not straightforward, as variation does occur, and critical study is required to determine what order is most pragmatically neutral and most frequent. Nevertheless, Furne Rich (personal communication) suggests that SOV is basic for Arabela. Eastman and Eastman (1963:158-9) cite SVO as basic for Iquito. However, most of their examples show that the preverbal subject reference is not a free noun or noun phrase, but a bound form on the verb. Many examples of preverbal subjects are negated or appear to be contrastive. They also state that 'subject may occur [after the verb] to highlight the sentence as an important one, as when the chief character of a narrative is introduced'. Although they

do not state that objects can occur preverbally, they in fact provide examples of this.

One interesting feature of Iquito not discussed by Eastman and Eastman is apparent placement of direct object clitics or pronouns finally in the clause, following oblique or indirect objects:

(8) kímasɨɨtɨɨyaa seis sóles núú.
I:sell six soles it
'I sell it (for) six soles'.

(9) nuumiitɨɨyaa siyuuyáána núú
he:is:giving fisherman it
'He is giving it to the fisherman'.

When the direct object is nominal, however, it precedes oblique objects:

(10) nuíínii kánuu inɨɨsi-íira
she:is:twisting fiber hammock-for
'She is twisting fiber for a hammock'.

This appears to be entirely parallel to placement of Yagua direct objects and object clitics. When expressed by a nominal, the direct object normally precedes the oblique object. When expressed only by a clitic, however, the clitic attaches to the final element of the clause:

(11) Rachǫǫnáásiy jɨɨtanɨɨ nurutu
Ray-sǫǫnǫ-jásiy jɨɨta-nɨɨ
1SG-lift-PROX1 PROG-3SG alligator

mụ̃ụviimú́jụ.
mų̣u-viimụ-jụ
canoe-inside-allative

'I lifted the alligator into the canoe'.

(12) Rachǫǫnáásiy jɨɨta mụ̃ụviimú́jụnɨɨ.
Ray-sǫǫnǫ-jásiy mų̣u-viimụ-jụ-nɨɨ
1SG-lift-PROX1 PROG canoe-inside-allative-3SG
'I lifted him into the canoe'.

In sum, basic order of subject, object and verb among Zaparoan languages is not clear, but a significant amount of variation is observed. There may be a pattern of moving direct object clitics or pronouns towards the end of the clause. I do not have sufficient data on any of the Zaparoan languages to make any claims regarding the basic

order of descriptive modifiers. It is clear, however, that the languages are postpositional and that the genitive noun precedes the head noun.

6 Verbal morphology

Another shared similarity is the presence of verbal affixes indicating location or direction of action, and type of movement accompanying action. This morphology has aspectual meanings as well. Such morphology is found in at least the Arawakan languages, as well as Peba-Yaguan and Zaparoan. Here I give examples of such morphology from Arabela, Iquito, and Yagua.

Eastman and Eastman (1963:180-1) describe the organization of Iquito verbal morphology following the verb stem as:

+ Stem +/- Neg +/- Aspect + Tense +/- Reportative

Their term 'aspect' subsumes a number of suffixes which indicate not only aspectual meanings such as:

ɨ́ɨ́ráá ~ yɨ́ɨ́ráá 'inceptive'
aa ~ yaa 'progressive'
ráá 'cessative'

but also location and movement:

wáá 'up, upriver'
kuaa 'down, downriver'
kuwáá 'returning'
sawáá 'arriving'

The Eastmans' term 'tense' really applies to a tense/aspect category comprised of:

ki ~ ra 'present, done today'
kura 'past'
riki ~ kiaaki 'ancient past'
ri 'incomplete, continuous'
kuma 'far distant future'

No discussion is provided of co-occurrence restrictions or possible order variation among 'aspect' and 'tense' categories.

R. Rich (1975) lists the following verbal morphology for Arabela:

-ya ~ -a ~ -o 'repetitive' or 'returning' (distributive?)
-ré ~ -ri ~ -ro 'punctual' or 'completed'
-sé ~ -si ~ -su 'go and do (?)'
-ma ~ -mia ~ -mo 'stop and do on the way'
-ko ~ -kio 'do while going'; 'do in an inwards direction', or 'upriver'
-rikiaa ~ rikioo 'incomplete past' or 'interrupted'
-kee 'punctual' or 'suddenly'
-rukua 'downriver' or 'recent past'
-kiaa 'habitual'

In Payne and Payne (in progress), organization of Yagua verbal morphology following the root is described informally in terms of general syntactico-semantic 'regions' of the verb as follows:[3]

ROOT DERIVATION LOCATION ITERATION PERFECTIVITY MOVEMENT TENSE

There are a number of co-occurrence and order restrictions between specific affixes of the different categories such that the above schema only gives an approximation of how any one verb might be organized. It should also be kept in mind that location and movement suffixes are not devoid of aspectual meanings. Locational/directional affixes include:

-imu 'down, downriver'
-sa 'up, upriver'
-ja 'across (land or water)'

Iteration affixes include:

-yaa ~ yąą 'distributive'
-jayąą 'iterative'
-jaa 'iterative movement to some other place'
-janapúúryíí 'suddenly' or perhaps 'semelfactive'

Perfectivity affixes include:

-mu 'completive'
-núúy 'imperfective'
-jaanca 'continuative'
-sara 'habitual'

Movement affixes include:

-títyiiy 'going along directly towards some destination'
-nąyąą 'going all over with no particular destination in mind'
-rii 'stopping enroute to do something, but then continuing on'

-nɣwɨɨ 'to do on arrival at the point of reference'
-nɣwee 'to do on arrival at a location away from the point of reference'.

There are five tense formatives in Yagua (not including the future/irrealis auxiliary):

-jásiɣ 'proximate 1' (a few hours ago, or future)
-jáɣ 'proximate 2' (one day ago, or future)
-siɣ 'a few weeks ago'
-tíɣ 'a few months-year ago'
-janɣ/-jana 'distant past'

Evaluation of the significance of similarities in these languages relative to both the presence and organization of movement, location, aspectual, and tense formatives should be witheld, pending study of verb organization in other languages of the area. It seems clear that Yagua has a more sharply defined tense system separate from location/movement/aspect formatives than do the Zaparoan languages.

A second similarity concerns the 'infinitive' endings. In Zaparoan these are **-nu** (Arabela), **-no** (Andoa), or **-ni** (Iquito). In Yagua the infinitive/participial endings are **-janɣ** (or **-anɣ**, **-ɛnɣ**, **-onɣ**, **-ɔnɣ**, **-enɣ**, **-ɵnɣ**) in the Cahocuma dialect, or **-jana** (with parallel allomorphs) in the Vainilla dialect. Paul Powlison (personal communication) has pointed out that although one can see similarities of form and meaning here, one could just as well argue for a relationship between the Yagua suffixes and Spanish **-ando** or **-ado/-adɛ**, etc.

The passive morpheme in all the Zaparoan languages is **-sa** or **-t^{s}a**. In Peeke's Andoa field notes this is consistently written as [t^s] , and it seems there is some indeterminacy regarding the /s/-/t^s/ phoneme distinction in the Zaparoan family. There is no productive passive morpheme in Yagua, but there is a series of 'passive nominalizers' which derive a nominal referring to the understood object of a transitive verb. These nominalizers consist of the formative **-sa-** [-t^s-] plus a suffix **-ra** 'inanimate or animate', **-ɨ** 'animate singular', **-nɣɣɣ** 'animate dual', **-vay** 'animate plural'. Thus, for example, **nɛɣɛɛ** indicates 'stomp', but **nɛɣɛɛsara** 'a stomped thing', **nɛɣɛɛsɨ** 'a stomped one (animate)'. Thus, it may be that Yagua **-sa-** has etymological associations with a passive. Functionally

parallel nominalizers are found in the Zaparoan languages, but without distinctions for animacy and number: Arabela **-saʟu** as in **powata** 'tell' versus **powatasánu** 'what is told', Andoa **-sano** as in **asa** 'eat' versus **asasano** 'what is eaten'.

Perhaps the most intriguing similarity between Zaparoan and Yaguan languages concerns transitivity-related derivational morphology. It is especially tantalizing in the face of little obviously shared lexicon. In Yagua there is a valence-decreasing formative **-y**. This formative is lexically restricted, but can be applied to a fairly large subclass of verb roots (Payne, to appear b). ('Third singular' is arbitrarily translated as 'he', 'him', or 'his', though the Yagua forms are neutral for masculine versus feminine gender.)

(1) Sa-nǫǫtá-ra.
3SG-knock:down-inanimate
'He knocks it down'.

(2) Sa-nǫǫta-y.
3SG-knock:down-detransitive
'He falls down'.

For Arabela, R. Rich (1975) lists **-ji**, **-je**, **-e**, and **-ai** as allomorphs of a detransitivizing suffix.

There are several transitivizing suffixes in Yagua. These include **-sa**, **-siy**, **-su**, **-nạ**, **-nịy**, and **-nụ**, all of which are lexically restricted. It is possible that some of these suffixes are etymologically related to postpositions, such as **-nịy** 'in' (Payne, to appear b). R. Rich lists **-n** and **-ni** among the valence increasing suffixes of Arabela. I do not have information on the productivity of the Arabela morphemes.

The most striking parallel in the transitivizing morphology is the formative **-ta**. In Yagua, at least, this is not lexically restricted. As discussed in Payne and Payne (in progress) there may be two **-ta** transitivizing morphemes. This is suggested by pairs such as the following, where the inherent tone features of **-ta** seem to have an effect on the tone of the preceding morpheme:

(3) Sa-nịkyéé-ta-títyiiy.
3SG-talk-TA-going:directly
'He talks (with someone) while going along'.

(4) Sa-nɨkyee-ta-títyiiy.
3SG-talk-TA-going:directly
'He talks/calls (to someone) while going along'.

With some verb roots use of **-ta** conveys a greater sense of volition or intensity than the verb without **-ta**:

(5) Sɣɣnʉ́ʉ́y.
sa-jɣnʉ́ʉ́y
3SG-see
'He sees'.

(6) sɣɣnʉ́ʉ́tyanɨɨ.
sa-jɣnʉ́ʉ́y-ta-nɨɨ
3SG-see-TA-3SG
'He watches/cares for him'.

In other pairs, use of **-ta** indicates that the syntactic direct object is a semantic instrument or item which accompanies the subject of the clause:

(7) Sa-tiryǫǫ.
3SG-lie:down
'He lies down (one's self)'.

(8) Sa-tiryǫ́ǫ́-ta-ra.
3SG-lie:down-TA-inanimate
'He lies down with it (e.g. a book)'

If there are indeed two homophonous transitivizing **-ta** formatives, at least one (if not both) clearly correspond to the postposition **-ta** 'instrument' or 'comitative':

(9) Sa-ya sa-wátará-ta.
3SG-go 3SG-woman-TA
'He went with his (someone else's) wife'.

(10) Sɨɨčitiy kííčityanɨɨ
sa-jɨčitiy kííčiy-ta-nɨɨ
3SG-poke knife-TA-3SG:anim
'He pokes him with a knife'

(11) Sɨɨčitítyara
sa-jɨčitiy-ta-ra
3SG-poke-TA-inanimate
'He pokes with it'.
(*'He pokes it'.)

When the instrument or comitative participant is not

expressed by means of an overt noun, **-ta** may simply occur as a verbal suffix, following other derivational suffixes but preceding iteration, aspect, movement, tense, and other verbal suffixes:

(12) S**i̯i̯**čitítyajay**a̯a̯**sarára.
sa-j**i̯i̯**čitiy-ta-jay**a̯a̯**-sara-ra
3SG-poke-TA-continuative-habitual-inanimate
'He always pokes with it'.

In the Zaparoan languages there are likewise possibly two verbal suffixes **-ta** which have a transitivizing effect. R. Rich (1975) writes 'El sufijo **-ta** ~ **-tia** indica que hay un "aspecto acompañante" al sujeto de un verbo intransitivo. No es el mismo sufijo **-ta** con que se forma el verbo transitivo con ciertas raíces'. Similarly, there is also a postposition **-ta** 'instrument' or 'comitative'. Rich adds: 'Aunque el sufijo en el sustantivo [i.e. a postposition] parece igual al **-ta** "aspecto accompañante" [i.e. the verbal suffix], se diferencia por su distribución'.

Peeke (1959) indicates that **-ta** is the instrumental postposition in Andoa: **amáka-ta** 'stick-with'. Peeke (1953) also lists **-ta** as a verbal transitivizing suffix: **nana-ta** 'to bathe another' versus **nana** 'to bathe one's self' (compare Yagua **sa-n̯a̯n̯a̯y** 'he bathes (himself)' versus **sa-n̯a̯n̯a̯y-ta(-ni̯i̯)** 'he bathes (someone else)'). Its position within the verb is after certain other derivational suffixes and before movement, aspectual, and tense suffixes.

This postposition probably reconstructs as **-ta** for Peba-Yaguan. The only form found in present-day Yagua is **-ta**. Rivet (1911a) gives **-ta** for Yameo, apparently drawing on colonial catechismal sources. He provides examples of **-ta** suffixed both to pronominal forms as a postposition, and examples of **-ta** suffixed to verbs: **-hoe-ta** 'you-with', **za-lequeala-ta** 'with his speech' (or possibly 'he speaks with someone?--cf. the Yagua examples in (15) and (16) above). No information is available for Peba.[1] The postposition probably reconstructs as **-ta** or **-jata** for the Zaparoan family: Iquito **-jata**, Andoa **-ta**, Arabela **-ta**.

1 Conclusions

As discussed in Sections 3 through 6, there are a number of similarities between Peba-Yaguan and Zaparoan languages. Relative to phonology these include almost identical consonant systems, an association between [t^s] and [s] or /s/, pitch and intonational phenomena, metathesis of /y/ with following consonants accompanied by consonant and

vowel changes, and an association between /h/ and nasalization. Information on Zaparoan constituent order is sketchy, but it appears there may be a tendency to move object pronouns or clitics to the end of the clause in both Iquito and Yagua. With regard to verbal morphology, in both language families there are possibly two **-ta** transitivizing morphemes, corresponding to an instrumental/comitative postposition **-ta** or **-jata**. As a verbal suffix, **-ta** occurs close to the root preceding aspectual, movement, and tense formatives. It follows other derivational formatives, and at least in Yagua, it is highly productive.

If borrowing should prove to be the source of all these shared features, we might expect to find stronger similarities between Iquito and Yameo, since from what we presently know, the Peba and Yagua languages have not been in significant contact with any Zaparoan group throughout the past three centuries. Unfortunately little data are available on Yameo, and throughout this paper documentation of similarities has been based primarily on Yagua within the Peba-Yaguan family. If the shared features are due to borrowing, contact and subsequent migration must have been significantly prior to the seventeenth century.

It is widely assumed that the easiest and first features to be borrowed in a language contact situation are lexical items. Following this, phonological features and derivational affixes may be borrowed. Borrowing of morphology like **-ta** and the gender endings like **-nu**, **-tu**, and **-ru** or **-ruy**, purportedly would not occur unless there had first been significant lexical borrowing. However, the list of lexical items in Section 2 does not in itself suggest a high enough level of borrowing to account for almost identical phonological systems and these morphological similarities.

If we tentatively rule out borrowing as a source of these shared phonological, order, and morphological features, this leaves independent origin and genetic relationship as possibilities. At present I would maintain that independent origin cannot be ruled out. Movement of given information towards the end of the clause, such as the Yagua and Iquito object clitics/pronouns may be a general tendency in verb-initial languages (though as noted above, constituent order in Zaparoan is basically unstudied). Relative to the **-ta** postpositional -- transitivizing suffixes, Nichols (in progress) shows that an identical hopping of instrumental/comitative adpositions next to the verb root is found in Chechen, Ingush, and Abkhaz. And as noted in Section 3, there may be a phonetically natural

association between (h) and nasalization, and the consonant systems are not in anyway odd.

Nevertheless, the similarities are intriguing and we may have an instance of Sapir's 'submerged features' remaining as the primary evidence of a genetic link (cf. Campbell and Mithun, 1979:55). But if there is such a link, lack of lexical cognates is indeed a problem. Here, I would first of all reiterate that sound correspondences and solid reconstruction have never been given a critical look. Secondly, as Campbell and Mithun (1979:54) remind us, 'basic vocabulary ... may perhaps suffer radical replacement under varying socio-cultural conditions'. Li (1984) argues that for Hui, replacement of Altaic lexicon with Chinese lexicon accounts for what looks like a Chinese language with some vowel harmony, non-Chinese phonetic segments, suffixal cases, postpositions, and SOV constituent order. That is, Hui may be a case of an immigrant group coming into contact with a superstrate Chinese dialect. Substratal Altaic features remained even though massive vocabulary and some syntactic features were acquired from Chinese. In the Yaguan-Zaparoan situation, conceivably the two families extended from a single genetic source. But under some unknown social or political pressure, one group suffered massive, if not total, lexical replacement due to contact with a non-Yaguan-Zaparoan superstrate language. The superstrate language group under which this occurred then itself disappeared or became sufficiently integrated with the contact substrate group such that by the colonial period, the superstrate and substrate languages were indistinguishable.

Whatever the correct analysis of the data should be, the entire western Amazon region deserves serious study relative to features which may identify it as a linguistic area in the technical sense. In the light of such research, we should be able to more clearly evaluate the nature of the Yaguan-Zaparoan connection.

Appendix: Comparison of Arabela and Yagua Classifiers

Yagua classifiers as given here represent the San José de Loretoyacu dialect, spoken near the border of Peru with Colombia. Question marks indicate that the classifier is used for the item indicated, but that I do not have sufficient data to know what else the classifier might represent.

ARABELA		**YAGUA**	
-kua/kuasi	'people, male'	-nụ	'animate singular'
		-nų̣ų̣y	'animate dual'
		-vay	'animate plural'
-ka/-kua	'general'	-ra	'neutral'
	'medium sized round object'	-siy	'sweet potato'
		-ka̱y	'(empty) **totuma** gourd'
		-tu	'**totuma** gourd'
-ko	'empty containers including houses	-nụ	'clay water jug'
		roore	'house'
-kojua	'hand, finger'	jadna̱a̱	'finger'
		jomọttu	'hand'
-kujua	'leg'		
-i-hue/-hua	?'roots, manioc'	-ka̱a̱	'manioc'
-huana	'long, thick item'	-mụ	'**chambira** trunk'
		-na/-na̱	'banana trunk'
		-nụ	'tree'
		-nɨɨ	'canoe'
-naja	'items which also take **-huana**'		
-jaaka	'seeds (plural)'		
-jajau	'small round item'	-ju	'egg'
		-siy	'small round item'
-maka	?'long thin item'	-mɨɨ	'flowers, sprouts'
		-nuu	'flute, bone, cane'
		-puu	'house pole'
		-wuu	'house pole'
		-roo	'dart, needle, spear'
		-dasiy	'blowgun, shotgun'
		-nakye	'tongue'
		-nụne	'cultivated field'
-mo	'stream'		
-mue	?'feather'	-mụụ	'feather, stream'
-muejaru/-naka	?'hair'	-jasiy	'hair'
-naku	?'liquid'	-ja̱a̱	'liquid'
-neka	?'arm'		
-nee	?'instruments'	-jɨ	'oar'
		-ra/-nay	'knife, machete, scissors'

-nikiaka	?'face'	-vɨ	'paper, leaf'
-nokua	?'foot'	nɤmɤttu	'foot'
-nu	'hammock'	-kɵɵ	'hammock'
-ojuaru	?'tail'		
-ke	'cloth'	-jay	'skin, cloth'
		-juu	'net'
		-kuuy	'bags, pants'
-kera	'native woven item, material used for weaving'	-rɤɤ	'**chambira** fiber'
		-koo	'palm fiber clothing'
		-soo	'palm fiber clothing'
		-tu	'woven palm leaves'
-raki	?'roll of cloth, soap'	-panyey	'flat, thick item'
-rikiaja	?'neck'		
-ru/-tu	?'feminine'	(**-rɤɤy** and **-tu** are Yagua feminine endings, but are not truly classifiers)	
-ru	?'basket'		
-si	?'pot, shiny white item, scar'	-tɵɵ	'cooking pot'
-sokua	?'firewood'	-puu/-ray	'firewood, split log'
-su	?'item composed of small pieces, pieces of such an item'		
-yokua	'rope, vine, long item'	-jɤɤ	'long tieable item'

Notes

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[1] Abbreviations used in this paper are: anim = animate, PROX1 = first proximate tense (usually interpreted as one day ago), PROG = progression along the major event or theme line (**jiita** is also used in certain marked constructions to signal pragmatically marked information), SG = singular, CF = classifier, demo = demonstrative root, neg = negative. Nasal consonants preceding oral vowels have an oral release, which in other linguistic papers and in the practical orthography have been represented with **d** and **b**, rather than **n** and **m**. In this paper I use a more phonemic representation in order to facilitate cross-language comparison.

[2] Although I do not have extensive information on Panoan (or Tupí-Guaraní) languages, there appear to be other basic typological differences between these and the language families bordering them on the north and south. In particular, the Panoan languages are SOV switch-reference languages with ergative/absolutive verbal morphology. The differences suggest that they might be a later intrusion into this area.

[3] A similar approach has been suggested for Preandine Arawakan languages (David Payne 1978; Wise, to appear).

[4] Although the formative **-ta** is also found in Quechua, it does not correspond to the Yagua-Zaparoan **-ta** in either distribution or meaning. In Quechua **-ta** is a direct object case marker and does not have any clear connotations of 'instrumental' or 'comitative'.

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LOCATIONAL RELATIONS IN YAGUA NARRATIVE

Thomas E. Payne

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1 Introduction

There have been many attempts to list and categorize the relationships that may exist between units of text in natural language. Grimes (1975) provides perhaps the most inclusive treatment of such relationships between units at every level of structure. The level we will be most concerned with in this paper is that represented by Grimes' 'rhetorical predicates' (see Grimes, ch. 14). These are predicates whose arguments are not specified for semantic role, and which may relate large sections of text to one another. For example the rhetorical predicate termed ALTERNATIVE by Grimes is symbolized, and sometimes realized in English surface structure, as **either X or Y**, where the arguments X and Y are not specified for semantic roles and are typically instantiated as propositions. When X and Y are propositions they may be based on lexical predicates

(i.e. predicates whose arguments are specified for semantic roles) or they may themselves be based on rhetorical predicates. Thus a potentially recursive hierarchical structure is defined. The main function of rhetorical predicates, according to Grimes, is to organize the content of discourse, i.e. to provide the necessary conceptual framework that transforms a string of propositions into a text.

Grimes and others working in this area (e.g. Longacre, 1976; Mann and Thompson, 1983; Longacre and Thompson, to appear) all give lists of such predicates. The kinds of predicates that tend to appear on such lists are, roughly, motivational (CAUSE, MOTIVATION, PURPOSE, REASON, SOLUTIONHOOD, etc.) logical (CONDITION, ALTERNATIVE, CONJUNCTION) and temporal (SEQUENCE). Only Grimes mentions location and direction as possible parameters by which propositions might be related by rhetorical predicates, though he does not fully develop or exemplify this notion. In this paper I will attempt to show that locational relations are specified by rhetorical predicates in the same way as the other relations mentioned above are. I suggest that the paucity of locational and directional relations in lists of rhetorical predicates in previous work is due to the absence of specific morphosyntactic devices for indicating such relations in the languages that most linguists speak.

Data for this paper come from Yagua, a lowland Peruvian language in which location and direction play a very significant role in the organization of morphosyntax and discourse. A framework is developed in which the **locational structure** of a text can be diagrammed. The use of certain locationally sensitive morphosyntactic and lexical devices is then explained in terms of such diagrams. In this paper only relations between major locationally defined textual units (i.e. **locational scenes**) will be considered, though there is no principled reason why the concept behind the notation might not be appropriate to indicate locational and directional relations between simple propositions as well. At this point in the development of the notation, however, the diagrams quickly become unreadable when multiple levels of locational structure are considered.

2 Locational relations as rhetorical (relational) propositions

Mann and Thompson (1983) list five characteristics of relational propositions (essentially equivalent to Grimes' rhetorical propositions):

1. Relational propositions are relatively 'basic,' in the sense that there is a tendency for many other sorts of inferences to be derived from them, but they tend not to be derived from other sorts of inferences.
2. Relational propositions arise in a text independently of any specific **signals** of their existence.
3. Relational propositions are involved in communicative (or illocutionary) 'acts,' in the sense of 'speech acts'.

In the following contrived example there are several implicit propositions conveyed by the juxtaposition of the two clauses under normal circumstances:

(1) He climbed the ladder and picked the pears.

Two propositions implicit in this example are specifically listed by Mann and Thompson as being formed on relational predicates. These predicates are SEQUENCE and PURPOSE, the propositions being 'he climbed the ladder **before** he picked the pears' (SEQUENCE) and 'he climbed the ladder **in order to** pick the pears' (PURPOSE). I suggest that there is another implicit proposition involved here, namely 'he climbed the ladder **on the way towards** picking the pears'. This proposition is formed on the predicate END OF TRAJECTORY, i.e. the act of picking the pears takes place at a location which is the end of a trajectory of motion described in the first clause. In this section I will briefly show that this locational relation has each of the above mentioned properties of relational propositions.

2.1 Locational relations as 'basic'

The proposition 'he climbed the ladder **on the way towards** picking the pears' is arguably more 'basic' than the PURPOSE proposition 'he climbed the ladder **in order to** pick the pears.' This is evidenced by the fact that under the most natural reading of this sentence, the PURPOSE proposition depends on the END OF TRAJECTORY one, and the END OF TRAJECTORY proposition does not depend on the PURPOSE one. Climbing the ladder will not fulfill the purpose of picking pears unless there are pickable pears located somewhere near the top of the ladder (barring unusual circumstances such as a laboratory monkey might

encounter in an experimental situation). Thus the proposition that the actor climbed the ladder for the purpose of picking the pears is dependent on the fact that climbing the ladder conveys him towards a location where the picking could take place. Thus the PURPOSE proposition is dependent on the END OF TRAJECTORY proposition. The inference of an END OF TRAJECTORY relationship, on the other hand, does not depend on whether the actor climbed the ladder for the purpose of picking pears. He might, for example, have climbed the ladder to pick avocados but found out when he got to the top that the tree bore only pears. Under either interpretation the picking of pears takes place at the end of a trajectory of motion described by the climbing of the ladder. Since the END OF TRAJECTORY proposition is more basic than the PURPOSE proposition, I infer that this locational relation is relatively 'basic', and therefore possesses property (1) of relational propositions.

2.2 Locational relations are independent of overt signals

I consider it obvious that there is no overt signal of the END OF TRAJECTORY proposition in example (1). In fact, I contend that one reason why locational relations have been neglected in studies of other relational propositions is that they characteristically are not signalled in the morphosyntax of familiar languages. In Yagua, however, there are overt markers of such relations as END OF TRAJECTORY (and in fact there are many finer distinctions, to be discussed in Sect. 5), though even in Yagua such overt marking is not obligatory.

2.3 Locational relations are asserted

Mann and Thompson list four lines of evidence supporting the claim that relational propositions must be considered speech acts. These same lines of evidence apply equally to locational relations. In this section I will show that the locational relations exemplified in this paper are in fact assertions, as defined in Searle (1970).

2.3.1 Denial. Denying a locational relation destroys the text. Thus if we follow (1) with the sentence:

(2) But climbing the ladder didn't help him get to where he picked the pears.

the text is no longer coherent, or at least we have to struggle to impose a new kind of coherence on the text.

2.3.2 Redundancy. Following a sentence containing an inferred locational relation with another sentence making that relation explicit results in redundancy. Again, if we follow (1) with

(3) Climbing the ladder brought him to the place where he picked the pears.

there is an awkward degree of redundancy.

2.3.3 Felicity. The same kinds of 'felicity conditions' hold for the inferred locational relations in (1) as hold for assertions in general (Searle 1970:66). These felicity conditions are:

1. **S**(peaker) has evidence (reasons, etc.) for the truth of **p**(roposition).

2. It is not obvious to both **S** and **H**(earer) that **H** knows (does not need to be reminded of, etc.) **p**.

3. **S** believes **p**.

The locational relation in (1) is completely parallel to other relational propositions dealt with by Mann and Thompson in that it meets all of these conditions. If the hearer did not think that the speaker had evidence that the actor of sentence (1) picked the pears at the end of a trajectory of motion described as 'climbing the ladder' the text itself would be unsupported. If the hearer thought that it was obvious that the pear picking took place at the end of a ladder climb, then the text would be overly redundant. Finally, if the hearer didn't think the speaker believed that the picking actually took place at the end of the ladder climbing, then the text would be deceptive.

2.3.4 Social responsibility. Speakers are socially committed to the truth of the locational relations implicit in the sentences they utter. For example, if a neighbor says to me

(4) Claire pushed Billy off the porch and he bonked his head.

I assume he is informing me of a malicious act on the part of my daughter. If I were later to discover that Claire did push Billy off the porch and Billy did bonk his head, but that the bonking was not at the end of the trajectory initiated by Claire's pushing, I would be entitled to complain to my neighbor that he had misled me.

3 Locational scenes

The following discussion of locational relations in Yagua will rely heavily on the notion of **locational scene.** This term is more or less equivalent to Grimes' (1975:218) use of the term 'setting'. However, the latter term has often been used to refer to the particular kind of background, descriptive material associated with the first part of a discourse. In contrast, locational scenes are spatially defined areas of attention, parallel to scenes in drama, i.e. the subunits of a play normallly bounded by a lowering and subsequent raising of the curtain. In television and movies, of course, scene change is much more easily accomplished, and consequently plays a more pervasive role in the structuring of the piece. For instance, in a motion picture the scene might switch back and forth between two conversants as they alternately contribute to a conversation, whereas in a stage play a given scene is typically the backdrop for an entire act (i.e. a major episodic unit), though when scenery is minimal, scene changes may occur within an act. This notion of scene is primarily locational in that the different scenes are defined in terms of spatial orientation, e.g. the position of conversants in a room, a ballroom in a palace, or a battlefield.

In spoken discourse, of course, visual representation per se is not obviously relevant. However, the story telling process does involve the mental elaboration of a 'world' within which the story being told is enacted. Story tellers manipulate that world in various ways in order to achieve the particular communicative effect they desire. One way in which that world might be manipulated is through the use of scenes and scene changes. When Xenophon says of Cyrus in the **Anabasis** 'from there he marched on' he moves the Greek army from one locationally defined scene to another. The reader or hearer of this passage knows that whatever scenery etc. that existed in the world of the discourse before this point is now up for revision. The hearer's attention moves with the Greek army away from a particular scene and into another (example from Grimes 1975:218).

4 Locational orientation

Throughout this paper we will use the term **locational orientation** impressionistically to refer to the extent to which locational scenes and scene changes are a significant factor in the organization of a text. It stands to reason that particular discourse genre will have more use for

locational scenes than others. For example, a recipe will probably not have much use for multiple scenes or scene changes. In particular we would expect locational orientation to be most prominent in stories, as these are the kinds of discourses in which the elaboration of a locationally well defined mental world is the most useful. Even individual stories, however, vary in the degree to which locational orientation is significant. For example, highly metaphysical stories in which there is a great deal of emphasis on the internal struggles of the participants, such as Djuna Barnes' **Nightwood**, do not, in general, rely heavily on locational orientation. However, in a story like Homer's **Odyssey** locational orientation is very useful and highly structured. In the **Odyssey** high level locational scenes are used to delimit the various episodes in the heroe's journey. We also might expect cultures to differ in the degree to which locational orientation is a significant aspect of their characteristic story telling strategies. In the case of Yagua it is particularly clear that locational orientation is of great importance in telling all manner of stories and personal experience narratives.

5 Overtly signalled locational relations in Yagua

Relational predicates can, of course, be signalled by overt morphosyntactic marking. In English we have, for example, connectors such as 'because' which explicitly code relational predicates. Any given connector may have a particular relational predicate that it often codes, but it is typically not restricted to coding only that predicate. Similarly, the favorite relational predicate of a given connector can typically be coded with other connectors, or simply inferred from the context, as illustrated in Section 2.

5.1 Morphological signals of locational relations

In Yagua there exist several verbal suffixes that function to code locational relations between the proposition expressed by the verb they are attached to and some other unit of text. These suffixes and their meanings are listed in Table 1. In order to characterize the relations signalled by these suffixes I will use diagrams consisting of the following primitive symbols:

Locational scene:

Location of non-locomotive event:

Trajectory defined by locomotive event:

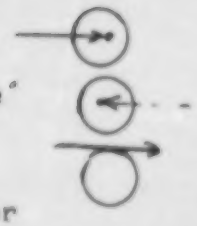
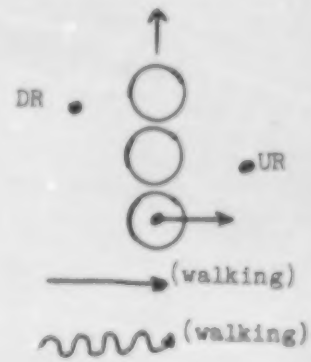
These symbols are best understood as representing a schematic 'map' of the discourse world being elaborated in the story. In order to describe all of the suffixes in Table 1, finer distinctions than these must be introduced, such as the difference between location upriver vs. location downriver from the currently activated scene. For now these finer distinctions are simply indicated by labelling. Although this notation is adequate for glossing individual forms, it is not particularly useful in diagramming whole texts in terms of the locational relations holding between each pair of propositions. An abbreviated version of this notation is used in Section 6 to diagram the locational relations holding between major locational scenes. The following examples illustrate some of the suffixes presented in Table 1:[2]

(5) Sąąna-a suuti-**imu**-nii.
2dl-irr wash-DOWNRIVER-3sg
'Wash him downriver.'

(6) Sį-įryi-**chá**-ra
3sg-get-UPRIVER-inan
'He gets it upriver.'

(7) Ri-cheñeeyǫǫ-**chiy**-ąą
3pl-yell-DEPARTURE-commutative
'They yell back and forth as they leave.'

The units of text that these suffixes relate to are typically locational scenes. That is, they indicate the locational orientation of the action expressed by the verb they are attached to with respect to the locational scene that is currently activated in the text. For example, **-nuvee/-nuvaa** (the difference is partially dialectical and partially morphonological) and **-nuvįį** indicate action carried out upon arrival on some scene. The opposition between the two is determined by whether that scene is the currently activated one or if it implies the activation of a new scene. For example clause 125 of the Non-identical twins epic (appendix 1) contains the suffix **-nuvįį**:

Suffix	Gloss	Diagram
-nuvee/-nuvaa	'upon arrival on new scene'	
-nuvɨɨ	'upon arrival on continuing scene'	
-rɨɨ	'passing by'	
-ja	'moving horizontally' (i.e. either overland, or over water but neither up nor downriver).	
-jasúmiy	'moving upwards'	
-jimu	'location downriver'	
-sa	'location upriver'	
-siy	'departing'	
-títyiiy	'walking along directly'	
-nayaa	'walking along aimlessly'	

Also marginally:[3]

-a	'toward new but non-specific scene' (i.e. actor's activity at new scene is not specified.)
-ɨ	'toward continuing scene'
-ø	'toward new salient scene.' (actor's activity crucial to the ongoing coherence of the text.)

Table 1: Locational verbal suffixes in Yagua

(8) Naani-ipeni-yaa-**nuvɨɨ**.
3dl-dance-distributive-on:arrival (continuing

'They (2) dance around on arrival.'

The scene activated at the point where this clause occurs involves the twins and their immediate environment. The clause describes the actions of the spirit parents on arrival on that scene. In clause 15 of the same text we find the suffix **-nuvee**:

(9) Naani-inúú-**nuvee** jɨɨta, 'jiiiiin'.
3dl-look-on:arrival(new scene) JIITA (sound word)
'She looks on arrival, "jiiiiin".'

This clause furnishes a transition from the previous scene, the manioc patch, and a new scene, the main house. The other suffixes listed in Table 1 are similarly used to indicate locational orientation with respect to the currently activated scene. I have tried to reflect that orientation as concisely as possible in the glosses I have given these suffixes.

5.2 Syntactic signals of locational relations

In addition to these morphological indicators, there are also formulaic syntactic expressions used to signal locational relations between sections of text. These expressions involve relatively neutral verbs of locomotion such as **-jiya** 'go', **-jɨtɨɨ** 'arrive' etc. Both of the folkloric narratives appended to this paper exhibit this common use of verbs of locomotion at scene changes e.g. appendix 1, clauses 7, 14, 25, 34, 46, 51, etc. Notice that scene change per se is not dependent on the presence of one of these verbs of locomotion; in most cases even if the verb of locomotion is omitted it is still clear from the content of the story that a change in scene has taken place, and in fact scene changes do take place without explicit use of any verb of locomotion, e.g. the introductions to scenes XI and XIII of the non-identical twins story (appendix 1). In these cases it is clear that the hearer must change his/her attention from the location of the dart tree and the dartholder tree respectively to the location of Grandmother's shelter, even though the actual movement involved is not coded. Similarly, verbs of locomotion can be used within a single locational scene, as in clause 32 of appendix 1. Here the verb 'return' is used even though there is no major change of scene (though one might say that there is an 'embedded' change of scene in clause 30 as the grandmother begins to leave. This change

is then reversed in clause 32). These observations are completely consistent with the characteristics of relational propositions in general, i.e. 'relational propositions arise in a text independently of any specific **signals** of their existence' (Mann and Thompson 1983:9). The explicit connectors help us see that the relational propositions are there, but the propositions themselves are not dependent on the connectors.[4]

6 Locational structure

We have seen several ways in which locational relations between various textual units are signalled in Yagua. In this section we will see how these signalling devices are used to structure Yagua narrative discourse.

6.1 Locational scenes as discourse units

As mentioned in the introduction, previous work on relational propositions has by and large neglected location and direction as possible parameters defining relational propositions. This observation is also true of work on discourse structure. As far as I know it has never been suggested that texts might have anything like what I am going to call **locational structure**, i.e. a potentially hierarchical text structure based on locational relations between various units. Rumelhart's (1975) 'story grammar' framework provides a way of describing hierarchical structure based on logical and temporal relations, but no mention is made of locational relations; Longacre (1976) provides a long list of possible relations between discourse units, but locational relations are not included. Even Grimes (1975:218), who lists locational and directional predicates alongside temporal predicates, mentions specifically only one such predicate, TRAJECTORY. The notion that some texts might be hierarchically structured in terms of relations signalled by this and potentially other locational predicates is absent. Similarly, Mann (1984) in developing a framework of text generation does not consider locational relations. In this section I will atempt to show how some of the locational relations discussed above are employed extensively in Yagua discourse to provide a coherent and culturally relevant structure for the discourse worlds elaborated in folkloric narratives.

The primitives illustrated in section 5.1 will be used to construct diagrams of the appended Yagua texts in terms of locational relations holding between scenes. The point of these diagrams is to illustrate the high degree of

locational orientation of these texts, and to graphically represent two contasting locational frameworks. Therefore specific detail of the kind of locomotion involved (e.g. overland, overwater, direct, aimless, etc.) is omitted, even though such detail may be present in the actual text.

6.2 Base oriented structure

The two appendices to this paper represent two contrasting strategies of locational structure used in Yagua stories. The Non-identical twins story (appendix 1), diagrammed in Chart 1, illustrates what I will call **base oriented** structure. In this strategy one location is the base from which the protagonist or protagonists make locationally defined forays, always returning to the base. Scenes I and III take place at the location I have termed 'the House' while II and IV represent forays of the protagonist, Grandmother, away from the House. In scene V the twins becomes the main protagonists and Grandmother's shelter becomes the base for the remaining fifteen scenes in the story. Every other scene (the odd numbered ones) from V to XIX take place in Grandmother's shelter. This structure is diagrammed in chart 1. It is significant that the base for most of this text is the location of Grandmother. Many Yagua folkloric narratives revolve around the house or location of an elder, either Grandmother or Grandfather. We might speculate that this centering of interest on an elder member of society is a reflection of the Yagua's respect for age and wisdom (see Chaumeil and Chaumeil 1978 for observations regarding the importance of elders in Yagua folklore).

6.3 Linear structure

The One-eyed Warriors story (appendix 2) exhibits what I am calling **linear** locational structure. That is, the scenes are related to one another in a linear way following the travels of the protagonists and their various adventures at each point in their journey (see chart 2). This particular discourse structuring strategy is very common in the folkloric and personal experience narratives of the lowland cultures of Perú. For example, upon arrival in a village or home it is common courtesy for a traveller to recount the story of his journey, where episodes correspond to stops the traveller made along the way. The significance of linear locational structure in Yagua narratives may be viewed as a reflection of the fact that the Yaguas are traditionally very migratory.

7 Conclusion

In this paper we have seen that studies of relational propositions in language have neglected location and direction as possible parameters whereby relational propositions might be defined. We have shown that locational relations such as END OF TRAJECTORY are properly characterized as relational propositions according to current definitions of the latter term. We have seen that many locational relations that are either left unexpressed or are only expressed through paraphrasis in English have specific overt manifestation in Yagua. Conversely, we might add, where English has many motivational and logical clause connectors, such as 'because', 'although', 'therefore', etc. Yagua has essentially only one, **daryáju** 'because'. Similarly, there is no way, other than paraphrasis or inference, of indicating sequential relationships such as 'after', or 'before' in Yagua (though temporal sequentiality can usually be inferred from the locational sequence of events).

Location, and in particular, change in location, is a very important aspect of the Yagua world view. This observation is evidenced by the fact that the Yaguas are traditionally very migratory. Yagua grammar and discourse structure reflect this fact in that both are highly sensitive to location. At the level of grammar, the language contains a large number of derivational suffixes which specify various possible relations between verbs and the locational scenes in which the action is being carried out (section 5.1). Also, there are at least three degrees of proximity in the system of demonstratives, and all three are used heavily in discourse. In fact the most common discourse connective is not a time word meaning 'then' as in many languages, but the locational **jáschiy** 'from there'. Similarly, we have seen that Yagua discourse makes very prominent use of location as a structuring parameter. The locational suffixes mentioned above as well as lexical verbs of locomotion are used extensively to delimit episodic units, and to indicate locational relations between scenes.

Finally, we see that once we understand the importance of locational orientation in Yagua narrative and develop a method of diagramming that orientation, some interesting observations and directions for further research emerge. First, we notice that there are two contrasting patterns of locational structure in Yagua narrative discourse. These contrasing patterns I have termed base-oriented and linear locational structure. Of course the texts used in this

study were chosen for the fact that they exhibit a high degree of locational orientation and they illustrate the two patterns of locational structure rather nicely. Any given Yagua text will exibit locational structure to a greater or lesser degree, and the extent to which that structure is base-oriented or linear is similarly variable. Furthermore, any given text may utilize both patterns at different points in the story. Nevertheless, it is significant that these patterns are available to story tellers as strategies for structuring their texts. My informal observation is that location is used much more commonly as a discourse structuring device in Yagua than it is in other languages with which I am familiar, even in texts where multiple scenes and scene changes are not employed to any great extent, e.g. the use of **jáschiy** 'from there' as a clause connector, and the great importance of orienting any text in space, even if that text will make use of only one locational scene.

Second, we can look at the locational structure of a text and make correlations between certain morphosyntactic constructions and the juncture between locationally defined units. In this way we may be able to explain the use of these constructions where an approach that did not consider locational structure would have to say they are simply optional (see T. Payne, 1984, for an explanation of the use of certain unusual verbs forms in Yagua that draws heavily on the notion of locational structure).

Third, there are possible explanations for why base-oriented and linear locational structure are significant in terms of the Yaguas' traditional respect for the elder generation, and the migratory nature of the Yagua way of life. Directions for further research in this area may be to draw correlations between the locational structures of narratives in migratory and non-migratory cultures, and in cultures which differ in the degree to which the elder generation is revered.

Appendix 1 (chart follows)

The Non-identical Twins

From Powlison, 1969

1. Yes, Creator created, Creator created.

Scene I: The House

---

2. The adults drink manioc beer,
3. they drink.
4. Her pregnant daughter says to the old woman:
5. 'While you weed the manioc patch, we are going to continue drinking.'
6. You don't drink anything with us.

---------- Transition ----------

7. She goes.
8. They drink in her absense.

Scene II: The Manioc Patch: Grandmother worries

---

9. After a while, suddenly they are quiet, silent.
10. She listens and listens.
11. 'What could have happened to them again, what?'
12. They aren't laughing, they aren't drumming anymore.
13. It's almost evening.
14. Finally she goes.

Scene III: The House: Grandmother discovers carnage

---

15. She looks on arrival. 'jiii'
16. The house is smoking, the ruins of the house.
17. The savages have burned it.
18. 'Certainly the savages have completely killed them!
19. No wonder they're not drumming, no wonder!
20. Clearly they've all been killed!'
21. From there she is wandering around
22. when she hears crying from the trash pile:
23. 'Cuway, cuway, cuway, cuway!'
24. 'jiii, here clearly the savages have thrown my daughter's child!

25. She goes.

Scene IV: The Trash Pile: Grandmother discovers the twins.

---

26. 'I will recover him to be my companion.
27. I will raise him to be my companion.'
28. She recovers him.
29. As she is going, she hears that another is crying there also.
30. 'Is someone there?'
31. She returns again.
32. It is his placenta that has been transformed.
33. She recovers him also.
34. She goes, then, under her shelter again.

Scene V: Grandmother's Shelter (in the manioc patch): The Twins grow

---

35. She washes him there on arrival.
36. In two days they sit up.
37. In three days they walk all over the place.
38. They don't delay in growing.
39. In five days they are complete adults.
40. He asks his grandmother:
41. 'How then did my deceased father die, how?
42. And my deceased mother?'
43. 'The savages just killed them.'
44. 'Really?'
45. 'Yes.'

Scene VI: The House: The Twins see game

---

46. The two go again there in the neighborhood of the ruined house of their father,
47. and they pass by all sides,
48. and they see little toucans, everything: toucans, wild turkeys.
49. They are eating their kill(?).
50. 'What can we use to kill them?'
51. The two return to their grandmother again.

Scene VII: Grandmother's Shelter: The Twins learn about hunting

---

52. 'With what did my father hunt animals, with what?'
53. 'With just a blowgun.'
54. It's not here, you know, the blowgun,
55. that which is its tree (that which is the b'gun tree).
56. From there your deceased father got his blowgun.
57. Darts also from the fork (heart) of the inayuga palm he got them.'
58. When it dawned again,

---------- Transition ----------

59. they left for the tree.
60. 'Be careful it traps you!
61. Quickly you must snatch it from inside,
62. if you want to get a blowgun.'
63. They go to the blowgun tree.

Scene VIII: The Blowgun Tree: The Twins get a blowgun

---

64. It is yawning over and over again in front of him, 'po, po, po!'
65. Right close by he is now, right close by.
66. There grabbing it he yanks, 'siyon!'
67. There it springs out beside it.
68. So he grabs his blowgun.

Scene IX: Grandmother's Shelter: The Twins learn about blowguns

---

69. He carries it to where his grandmother is.
70. He greets his grandmother;
71. 'Why have you ruined it again?'
72. 'Why not?'
73. 'For what purpose do you ruin it, for what purpose?'
74. 'So that our offspring will have to suffer (work hard) to make their blowguns.
75. Isn't it important that they make them with their hands? (rhet question meaning 'you know it's important that they make them with their hands').

---------- Transition ----------

76. They go again for darts.

77. 'Be careful, the scorpions that protect it bite you!
78. It's not just one biting thing that protects it, red scorpions and snakes also.

Scene X: The Inayuga Palm: The Twins get darts for their blowgun

---

79. He climbs searching to the fork of the inayuga.
80. He finishes off the scorpions, the red scorpions, the snakes,
81. and collects from where they were the darts.

Scene XI: Grandmother's Shelter: The Twins learn about darts

---

82. She sees also that he carries a roll of darts.
83. 'Why did you finish off the biting things that protected it also?'
84. 'Why not?'
85. 'For what reason did you finish them off, for what reason?'
86. 'So that they will have to whittle their darts with a knife.
87. They go again for a dartholder,

Scene XII: The Catirina Palm: The Twins get a dartholder for their darts

---

88. which is in the fork of the catirina palm.
89. There are biting things that protect it also.
90. He finishes them off
91. the ones that protected it also
92. and he gets the dartholder also.

Scene XIII: Grandmother's Shelter: The twins learn about dart holder

---

93. His grandmother sees also.
94. 'Why did you finish off the biting things that protected it also?'
95. 'Why not?'

96. 'So that they will have to weave their own d'holders.'
97. Thus it remained there (i.e. like that).

Scene XIV: The House: The Twins hunt and grab the magic flute

---

98. The two of them go from there again around the neighborhood of the ruins of the house of their deceased father.
99. There they went blowgun-hunting little toucans, everything, wild turkeys.
100. There they spy on the spirit of their mother, and the spirit of their father
101. those that dance in the middle of the ruins of the house.
102. Another day, the same thing again.
103. Another day, the same thing again.
104. Finally the two think:
105. If only we could snatch the flutes of our deceased parents,
106. with them we could secure vengeance for our departed parents.
107. Finally he says to his brother:
108. 'Let's go and snatch them!'
109. The two of them get up early again.
110. Today, yes, we are going to snatch them.
111. They hide nearby, there where they circle (all traditional Yagua dancing involves circling).
112. 'Here is where they come circling.'
113. They put cetico leaves over themselves, the other one too.
114. 'Be careful not to let go when you grab it!
115. If it heats up,
116. your hand will heat up immediately also.
117. If it shrinks to a tiny flute,
118. your hand will shrink immediately also,
119. If it enlarges to a huge flute,
120. your hand will enlarge immediately also',
121. he says to his brother.
122. The two (spirits) descend to earth again.
123. They are dancing on arrival
124. 'puju! they dance.
125. There he jumps up suddenly against them.
126. 'Rupa!' His brother has grabbed his deceased father's flute.
127. 'Tanti!' the two of them stick together.
128. His brother now screams:
129. 'Now my hand is burning!'

130. 'Equally your hand will heat up immediately also.'
131. 'Now it burns me!
132. Now it burns me!
133. Now I let go of it!'
134. 'Don't let go of it!'
135. Finally, he yanks his flute from him completely.
136. Only Placenta succeeds in grabbing the flute of his deceased mother.
137. Finally he snatches it away from her,
138. and she ascends jumping, 'puri'.
139. The two have snatched the flute from their deceased mother.
140. The two go again there to where their grandmother is.

Scene XV: Grandmother's Shelter: The Twins test the flute, Grandmother makes manioc beer

---

141. They call to their grandmother upon arrival:
142. 'Grandmother! Here, sit down.'
143. She sits down at their command,
144. and they blow into it, 'váá, váá, váá, váá, váá, váá'
145. One strong blow into it, 'kiiin',
146. She falls like dead.
147. Their Grandmother revives again.
148. She says,
149. she scolds her two grandsons:
150. 'Jii! What's happening with you two?
151. Obviously you've succeeded in grabbing the flute of your deceased mother also!'
152. 'Why not?
152. Maybe with it you (speaking to other twin) will secure
vengeance for our dead father.'
154. He says to his grandmother:
155. 'Grandmother, prepare manioc beer.'
156. 'Who, then, is going to drink it with you, who?
157. There aren't any people that I see (i.e. know about) around here, none.'
158. 'Just nearby there are people.'
159. '(but) the house is not large enough.
160. Where then will the people sit, where?'
161. 'I'll just make the house larger then!'
162. She makes the manioc beer.
163. 'Jujum,' she finishes making it.
164. When she finished making it,
165. she says to her grandson:
166. 'Here now is the manioc beer that you requested.'

167. He commands then his elder brother:
168. 'Invite!'
169. 'Where then will I go to invite, where?
170. I have not seen any people around here, none.'
171. 'But just over there there are people.'
172. Finally, he goes.

Scene XVI: The Jungle: Elder Brother searches for people

---

173. From there he goes circling,
174. without seeing any people.

Scene XVII: Grandmother's Shelter: Elder Brother reports

---

175. He returns.
176. 'Aha! Many have you invited?'
177. 'I didn't see anybody to invite.'
178. He greets his brother:
179. 'Where, then, do people lack, where?.
180. I then will invite!'
181. Placenta goes.

Scene XVIII: The Jungle: Placenta creates the clans

---

182. Near the top of a heap he kicks.
183. 'Come and drink at my place!'
184. From there on the top of a heap of Macaw feathers,
185. 'jun!', 'Come and drink at my place!'
186. From there also on top of a Spotted Cavy burrow.
187. 'Come and drink at my place!'
188. From there also upon an ant's nest.
189. 'Come and drink at my place!'
190. From there also against the buttress root of a Pachaco tree he kicks in passing also.
191. 'Come and drink at my place!'
192. From there on top of a bat's nest he kicks in passing also.
193. 'Come and drink at my place!'
194. From there against the trunk of the blowgun tree he strikes in passing.
195. 'Come and drink at my place!'
196. He returns from there.

Scene XIX: Grandmother's Shelter: The Clans arrive and drink

---

197. 'Enough now.'
198. He says upon arrival to his brother again:
199. 'Do you think I have invited (things) which you say are
people?'
200. There are no people within a great distance, none.
201. After a long time, a long time, they now arrive in groups.
202. Those of the Squirrel clan begin to arrive,
203. those of the Red Macaw clan after them,
204. those of the Spotted Cavy clan after them,
205. those of the Ant (Isula, a large stinging ant) clan after them,
206. those of the Pachaco (a kind of tree) clan after them,
207. those of the Bat clan after them,
208. those of the Blowgun clan after them.
209. And the house was filled with people.
210. They pulled out the supports of the house to make a large house.
211. They drink all night long.
212. It dawns.
213. He tries it on them,
214. (to see) if it works.
215. He blows into it in the midst of them.
216. He blows hard into it.
217. They all fall then.
218. So he says:
219. 'It works!
220. So they get up early (to fight) against the savages.
221. 'Let's go to the savages!
222. Let's kill them!
223. They go.

Scene XX: The Savage's house:

---

224. As soon as they arrive near the house of the savages,
225. Placenta transforms himself into a small hawk, beautifully speckled.
226. He ascends running along the roof on arrival,
227. because the savage's roof didn't reach the ground.
228. He ascends running along the roof on arrival.
229. The savages hear:

230. 'Who then is running up there on the roof?'
231. They go out.
232. They look.
233. 'Who then also?
234. How beautiful!
235. Look!'
236. He calls to his kinsmen.
237. They come running out.
238. 'Jiin,' 'Unreal!'
239. They all run out of house, all the savages.
240. One carries a blowgun.
241. 'I'm still going to blowgun him!'
242. 'Don't blowgun him yet!
243. We should tell the people of the other house too,
244. that they might come right away.'
245. One runs to the other house
246. and tells them also.
247. They ran then also. 'Jiin.'
248. He begins to blow into the flute of his deceased mother, 'vää, vää.'
249. He says to him:
250. 'Don't blowgun him yet.
251. How is he going to play (the flute)?'
252. 'OK.'
253. He is blowing into it.
254. He blows. He blows. He blows. He blows.
255. Quickly he now blows.
256. With all his strength he blows into it,
257. 'Yun!' All the savages fall over,
258. there they are laid out.
259. Not one remains (standing).
260. So the ones that were with him run in passing.
261. There they kill with clubs.
262. 'Juuuun.' Finished!
263. 'Your request.
264. That's how they killed my deceased father.'
265. The matter was finished.
266. They drink the leftover manioc beer in the house again.
267. That's how all the clans remained.
268. So they all stayed outside.
269. So it was he who created the Squirrel clan, the Red Macaw clan,
270. so he created them all.

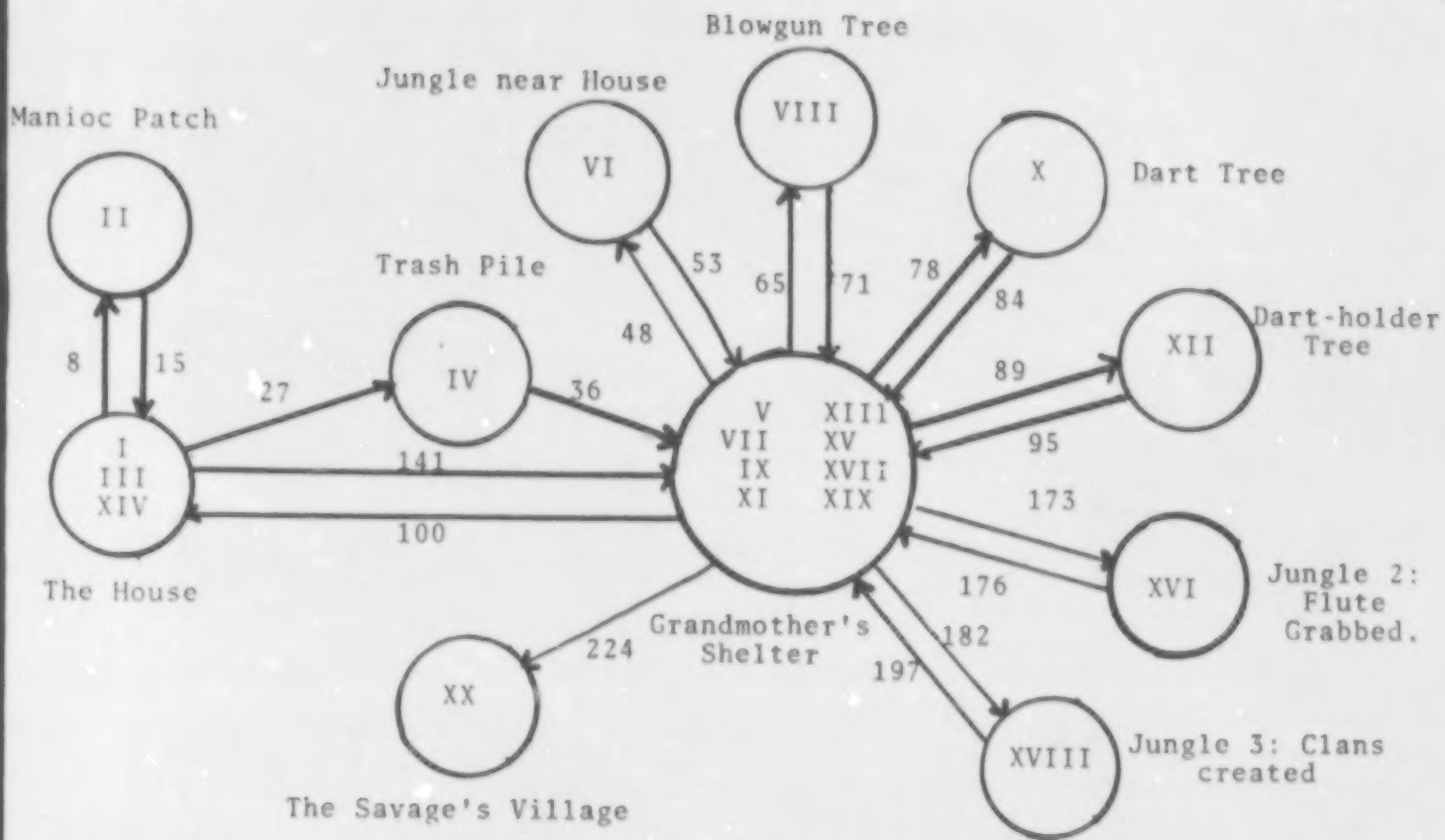


Chart 1: Base-oriented locational structure - The Non-identical Twins Epic

Appendix 2 (Chart 2 follows)

The One-eyed Warriors (excerpt)

from Powlison 1969

1. This is how the ancestors went as warriors in search of the savages.
2. Yes, they went.
3. 'Savages we will kill yet.'

Scene I: The Toad

---

4. They see on arrival a toad,
5. a huge toad lying in the middle of the trail.
6. One by one they wound him with their clubs, another also, another also.
7. So right there he swells up.
8. Another also.
9. So he swells up.
10. Another also, another also, another also, another also.
11. Just two remain
12. that don't wound him in passing.
13. They just pass by at a distance.

Scene II: The Warriors lose their eyes

---

14. When they have passed by the toad one by one,
15. there they sleep.
16. 'Here we will sleep.'
17. They each make their own shelter.
18. In the middle of the night they awaken.
19. Too bad! Now they are missing an eye, all one-eyes now.
20. He (Toad) had emptied the eye-sockets of all of them.
21. One speaks to his companion,
22. 'Are you the same?'
23. 'Why?'
24. 'Do you think that I still have eyes?
25. I have an eye on one side only now!'
26. 'Oh, the same!' another also,
27. 'The same also!' another also,

28. 'I'm the same too!' another also,
29. 'The same also am I!' another also,
30. 'I'm the same too!' another also,
31. 'I'm the same too!' another also,
32. 'I'm the same too!'
33. He had emptied the eye sockets of all of them.
34. 'Too bad!'
35. 'Why did that cursed toad pick out our eyes also?'
36. It dawns.
37. They go in search of him.

Scene III: The Warrior's thwarted revenge

---

38. 'We're going to kill him!
39. We're going to kill!
40. Because yesterday he emptied our eye sockets.'

---------- IIIA

41. They go around him, in vain.
42. His little birds see them.
43. 'puñi puñi puñi puñi. One-eyed warriors!
One-eyed warriors!'
44. 'juví' So they flee again.

---------- IIIB

45. From there they circle again.
46. In vain, already the little birds had seen them again.
47. 'Warriors! One-eyed warriors! One-eyed warriors!
48. So they flee again.

---------- IIIC

49. From there they circle again.
50. In vain, they've already seen them again.
51. They flee,again.

---------- IIID

52. Finally they return.
53. 'We can't kill anybody.'
54. They arrive at their shelters again.
55. There they think,
56. 'How are we going to do it?
57. Finally they get a Bejuco vine, a long piece.
58. A long piece they get.
59. They look for a charapilla nut to be their claws.
60. They look for Chambira palm fibers (?) to be their
body hair.
61. From there they look for Muena berries
62. and put them in place of their (missing) eyes.

63. The two are just observing them (the two that didn't club the frog and therefore didn't lose an eye?).
64. 'What are they going to do, what?'
65. 'Why should they transform themselves?'
66. They grab the Bejuco vine.
67. So they flee.

---------- IIIE

68. 'Juun!' They ci.. e in the same place again.
69. It (the vine) soon breaks 'royin! Iran!'
70. They go to look for a Hook Casha vine.
71. This is truly a strong vine.
72. They grab this one also.
73. 'Let's try again.'
74. They flee again 'juun!'

---------- IIIF

75. They circle again at the same place.
76. Circling again at the same place.
77. Circling again at the same place.
78. 'There. Now it is good.'
79. They throw the chambira fibers on their backs to be their body hair.
80. They say nothing more.
81. 'As what shall I go? (What shall I disguise myself as?)
82. 'Yes.' Another also.
83. 'I will be a Choro monkey.'
84. He goes leaping, no dice.
85. He doesn't knock any over (branches).
86. Finally another scurries up.
87. 'I will be the real Choro.
88. He leaps,
89. he breaks,
90. and goes knocking over dry branches.
91. 'I, truly, will be the Choro.
92. You will be our sentinels below.'
93. Another scurries up.
94. 'I will be the Howler monkey.'
95. He had put his poto around his neck to be his larynx.
96. Another had thrown his rattles also,
97. 'From you we will know when there are savages below,
98. when this bird (figurative or another disguised warrior) shouts below us,
99. that which is transformed rattles.'
100. He had thrown also his gourd purse, 'te, ru, ru, ru!'
101. He goes as the Purmero bird.
102. 'From you we will know also,
103. when these Purmeros shout below,
104. there must be savages below.'

105. The howler says to the two that don't transform
106. after he had ascended running into the trees.
107. He had hidden himself well.
108. He says to them,
109. 'Look from there.
110. Am I visible?'
111. They spy from various points.
112. 'You are quite visible!'
113. So he hides himself better.
114. He says to them again,
115. 'Look again (to see) if I am visible.'
116. They look from there again, from there also.
117. 'No. Now you are not visible.
118. Now it is good.
119. So he says,
120. 'Like this the Howler will not be able to be caught
121. when he hides himself in the middle of the thick leaves not very near.'
122. The Boar says to them also,
123. 'Take a shot at us, the Boars.'
124. They take a shot there 'pon!'
125. 'Ran!' so they scatter.
126. There they reunite again.
127. They arrive again.
128. They speak on arrival,
129. 'Like that you won't be able to kill many boar.
130. Just one you will kill.
131. Once in awhile you'll kill two.
132. They will always scatter themselves when you hunters arrive.'
133. So they go.
134. The collared pecari carries the banner.
135. 'Let's go now!'
136. They say to their two friends,
137. 'Over there go behind us.
138. Wherever we will go there.'
139. They go.

Scene IV: The animal parade

---

140. 'Juun!' One after the other they keep bumping the branches with their clubs, 'tye, tye, tye, tye'.
141. That is what their call is, the call of collared pecaris in flight.
142. The boar behind him, the choro behind him, the howler behind him, the little friars behind him.

143. They disappear overland noisily.
144. Too bad, the two stay behind them all.
145. Finally they go.

Scene V: Toad's sinister hospitality

---

146. 'Is this the way we came?'
147. Right there they come to the place of the toad again.
148. He is pounding in front of them, 'con, con, con, con!'
149. 'Well what are you doing?'
150. 'I am pounding ungurahui palm.
151. Come into the house and rest.'
152. The toad goes into his house too.
153. He gives them sweet potato , one potato to one and another potato to the other.
154. They eat it.
155. Again, he wants more of the same, his brother also the same.
156. 'I'm going to take a big bite of his piece of sweet potato also.'
157. 'Don't touch it!
158. He will bewitch you for doing that.'
159. He doesn't want to pay any attention to him.
160. Finally he gets up,
161. and bites off half of the sweet potato ,
162. 'Quiyon!' The other screams immediately there, 'Ayau!'

163. 'You have bitten my heart!
164. You have made my heart sore!'
165. Says his brother to him,
166. 'I already told you "don't touch it."
167. Too bad, now it's all over for you.
168. Now he has to do something to you for this.'
169. The other one (toad) finishes pounding the ungurahuis.
170. He offers them some also.
171. 'Do you want to eat pounded ungurahuis also?'
172. The two eat.
173. The toad eats and keeps piling up the sucked seeds.
174. He finishes sucking,
175. and scatters the sucked seeds, 'ran!'
176. 'Chujun! They will always call them ungurahui,
177. even though they are the transformed eyeballs of the warriors!'
178. 'It's their eyeballs that we've been sucking too!'
179. The two go from there.

Scene VI: Toad's revenge

---

180. 'Let's go now,
181. because it's late.'
182. 'With what shall we sleep?'
183. They keep looking for a hollow tree.
184. 'let's sleep here in this hollow tree.'
185. They gathered fibers of chambira to put in the opening
against his coming,
186. because now they were wise,
187. 'Well, he might follow us.'
188. It gets dark.
189. He comes in the form of a bat.
190. 'It must be him!'
191. Finally they sleep,
192. but they soon wake up.
193. He had tied his hammock above, the other below.
194. Suddenly his blood fell on him.
195. 'Careful!' 'Chi, chi, chi.'
196. 'You are urinating on me!'
197. He wakes up.
198. 'Don't say I'm urinating!
199. Do you think I still have a leg?'
200. My leg is cut off!'
201. You wished that it was untrue when I said "don't touch it".
202. How are you going to walk now, how?'
203. It dawns,
204. and the two of them exit.

Scene VII: The useless crutch

---

205. 'How are you going to walk, how?
206. Seeing as you are without a leg now.'
207. He says to him,
208. 'Cut a branch for me.
209. With a little branch I will go hobbling.'
210. He puts his leg then on the end, no dice.
211. They go.

Scene VIII: The disobedient leg

---

212. On departure he throws away his cut off leg.
213. He looks again.
214. There in front of him is his cut off leg lying again.
215. 'Here now again is my cut off leg, here?'
216. He grabs it again.
217. 'Maybe I should try to stick it in its place.'
218. He tries to insert it in its joint. No dice.
219. He throws it away again going along.
220. They go from there again.
---------- VIIIA

221. He sees again.
222. There it is lying again.
223. 'Are you here again?'
224. There by the side of a stream he works it (tries to replace it) again.
225. Finally he throws it in the water, 'tapuun!'
226. 'Juun!' It speaks going.
227. It has transformed itself into an alligator.
228. They go from there again.

Scene IX: The fungus tree
---

229. When the cripple sees on arrival a mass of fungus above,
230. he calls his brother.
231. 'There are lots of lemurs (or night monkeys) here!'
232. 'So where are the lemurs, where?'
233. 'I'm going to collect lots of them.
234. We won't even have to roast them either.'
235. 'I don't see any lemurs.
236. I just see a mass of fungus.'
237. Without paying attention to him,
238. he ascends.
239. He knocks down from there the mass of fungus.
240. 'There it is.'
241. Do you think he didn't realize that
242. the other had gone and transformed himself?
243. Finally he says,
244. 'I never want to get down from here, never.
245. Now I am accustomed here.'
246. His brother doesn't answer him.
247. 'Throw me my jungle achiote pouch, and the ball of achiote with it.'
248. He throws him his jungle achiote pouch, and his ball of achiote also.
249. He daubs this to become the base of his tail.
250. There where he daubed with achiote and jungle achiote

all over the base of his tail.
251. So he has transformed himself into a toucan.
252. He is now a toucan.
253. He says to him,
254. 'Let's go now.
255. There you will go right below me.
256. I will go spilling towards you chimicua berries.'
257. He flies, towards sitting there.

Scene X: The malicious Squirrel

---

258. He yells on arrival there also, 'cu, cu, cu, cu!'
259. He speaks to him,
260. 'Is this where you are?'
261. 'Yes, here I am.'
262. He flies from there towards sitting there on the other side of the stream.

---------- XA ----------

263. He yells on arrival there also.
264. The other speaks also.
265. 'So how am I going to cross over?'
266. He goes looking for a tree bridge.

---------- XB ----------

267. Finally he encounters Squirrel.
268. 'There you can cross on my tree bridge.
269. Right over there is my tree bridge.'
270. From a good distance Squirrel leaps.
271. 'Yuun!' Squirrel does not leap from nearby.
272. He says to him,
273. 'Just from there leap!
274. Just from there I always leap.'
275. He doesn't have the courage to try it.
276. Finally he goes way out.
277. He is close to the tip (of the tree bridge)
278. when he jumps 'cadaquin!'
279. There inside a water boa he falls, too bad.
280. Right there his brother sings.
281. From there he hears from inside the snake.
282. There he sings.
283. Right there he sings.
284. He spends one day there.
285. There he waits for his brother.
286. Finally he quiets down.
287. When he has gone,
288. he tells his wife in passing,
289. 'A snake has swallowed my brother.'
290. Finally the water boa ascends (from the water) with him to dry land.

Scene XI: Inside the water boa

---

291. ´Ay!´ It is very hot now for him.
292. It is not a little time that he has been inside him.
293. Right there was a little deer
294. that had been swallowed first also.
295. It is not just one day that he has been sitting there
getting bored inside now.
296. Finally something pricks his bottom.
297. ´What is it that is now pricking my bottom?´
298. He grabs it.
299. ´Aha! It´s a piranha jaw!´
300. He shows it to the deer.
301. ´A piranha jaw was pricking me in the bottom,
a piranha jaw.
302. Let´s cut with this the skin of his stomach.
303. Didn´t you say we are on dry land?´
304. ´Well yes.´
305. He cuts slowly ´diii!´
306. ´Tutu,´ it (the stomach?) gives a little twitch.
307. He stops again.
308. He cuts again.
309. It gives a little twitch again.
310. He stops again.
311. He cuts again,
312. until he gets tired.
313. Finally he makes a little hole.
314. He looks (through the hole).
315. ´Yes! We can say we are on firm land.
316. He makes the hole larger and larger and larger.
317. He measures it every time now.
318. ´Now we fit.´
319. He says to the deer,
320. ´You first are going to exit.´
321. ´OK.´
322. He exits, ´juyin!´
323. He exits following after him also, ´juyin!´
324. There (he) escapes.

Scene XI: On dry land again

---

325. The water boa falls back into the water ´chuun!´
326. He goes all over the place looking for a stream.
327. ´Where am I going to wash myself?´
328. The deer says to him,
329. ´You have saved us!´

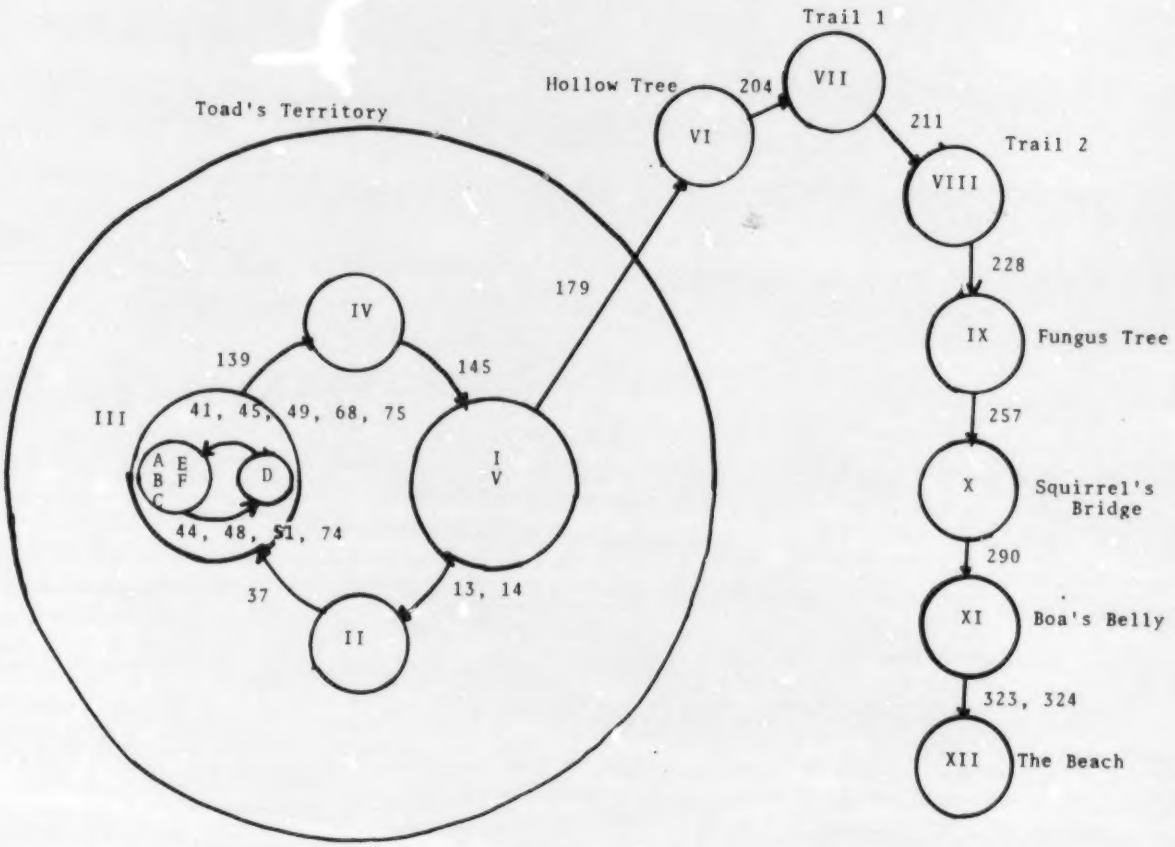


Chart 2: Linear-oriented locational structure - The One-eyed Warriors

NOTES

1. I use the term 'more basic' here in the sense of Mann and Thompson as 'implicationally prior'. This does not imply multiple levels of structure.

2. Conventions used in Yagua examples are: **irr** indicates the irrealis auxiliary used for future time and imperative clauses. Human mothers are coded as dual participants in the second and third person; thus 3dl, and 2dl forms are often translated as 'she' or 'her' in the free translations. Forms whose precise meanings are still under investigation are not glossed; rather their surface form is simply repeated in the gloss line in upper case letters.

3. These final three examples are marginal in that they are not fully productive and are very limited in their distribution (though quite common in terms of number of occurences in texts). They consistently occur with two stems, **-jit** 'arrive' and **-tąąry** 'return' and these stems do not occur without one of these formatives. Thus they are perhaps best viewed as vocalic components, albeit with some lexical content, of six distinct verbs. The final vowels of the first two suffixes in table 1 **nuvaa/nuvee** and **nuvįį**, also exhibit this association, though only for the **a/-į** opposition.

4. It is interesting to note that in the Campa language family of Perú (related areally and typologically to Yagua, but not obviously genetically), there is a clausc connector **ipoña/opoña** based on the third person singular forms of the verb **poñ** 'to come from' (J. Anderson 1984. Forms are from Asheninca Campa). The meaning of this form as a clause connector is described by Anderson as 'sequence', i.e. the clause introduced by **ipoña/opoña** occurs immediately following the clause that precedes it. Thus it appears this verb of motion (still used as such in the language) has been generalized from indicating locational relations to indicating sequential relations as well.

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NEW APPROACHES TO COPING WITH STRESS:

A Case Study in Conchucos Quechua

by

Anne M. Stewart

1 Introduction
2 Background
  2.1 The Quechua syllable
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1 Introduction

In recent years, various alternative theoretical approaches have been presented for the study of prosodic features in the phonological systems of natural languages. Among these is the metrical theory of stress, originally proposed in Liberman and Prince (1977). Metrical theory has typically been applied to languages that have already been analyzed in segmental frameworks, in an effort to illustrate the superior effectiveness of the metrical theory in providing straightforward analyses which are predictive of the way stress systems of natural languages behave. (For example, Hale and White Eagle 1980.) The primary purpose of this present study is, however, not to argue for the superior effectiveness of the metrical approach by comparing it with another approach, but to demonstrate its effectiveness by applying it to the description of a stress system which has not been previously studied, that of the Quechua of Conchucos, spoken in the eastern portion of the Department of Ancash, in northern central Peru. The analytical framework is as outlined in the first three chapters of Hayes (1980).[1]

In the metrical theory of stress as proposed by Hayes (1980), everything about stress can be reduced to a tree structure. The metrical rules give the directions for the construction of a hierarchy of binary branching metrical trees with each pair of nodes labeled **s** and **w**. Typically, at least two hierarchial levels are constructed: that of the **foot**, a unit containing one stressed syllable, and the **word tree** grouping together the feet (see Hayes p.39). The two levels are separated by a horizontal line in the representation. "Branching is the central, unmarked criterion of prominence." (Hayes p.45). Trees are uniformly branching: "All metrical rules must specify whether in the structures they create it is right nodes or left nodes that are dominant," (Hayes p.47) that is, susceptible to internal complexity. The unmarked labeling convention is that dominant nodes are strong (**s** in the tree structure). Correspondingly, recessive (non-branching) nodes are weak (**w** in the tree structure).

The metrical rules most often refer to the **rime projection** (Hayes p.13) of the syllable; that is, everything but the segments preceding the syllable peak (i.e. the onset). The rules may also be sensitive to branching below the rime level, in the syllabic nucleus. In such cases, they are said to be **quantity sensitive.**

The main stress of a word falls on the syllable dominated only by **s**'s. The other metrically strong syllables receive lesser stress. The labeling has a purely relative meaning, and the tree structure geometrically represents the degrees of relative prominence among syllables.

Although the primary purpose of the paper is a descriptive one, some of the implications of this analysis for other dialects of Quechua, specifically that of Huaraz, will be mentioned. It is to be hoped that, in proposing a particular analysis for one dialect of Quechua, a strategy for dealing with the stress systems of related dialects is presented.

2 Background

2.1 The Quechua syllable

The canonical syllable structure for Quechua is (C)V(C). There are two degrees of contrastive vowel length (the first person marker, for example, consists simply of length); however, long vowels may not occur in closed syllables. Tautosyllabic consonant clusters in native words are not permitted, but consonant clusters may occur across syllable boundaries. The possible syllable shapes for Conchucos Quechua (ConQ hereafter) are thus: V, V:, VC, CV, CV:, VC, and CVC.[2]

The vast majority of noun and verb roots in ConQ are disyllabic. Noun roots may end with a short or long vowel or a single consonant. Verb roots must end with a vowel, either short or long. Quechua is polysynthetic and agglutinating. Most of the suffixes, which are

numerous, begin with a consonant. They may be either mono- or disyllabic.

2.2 Data base

The data base for this study was a group of texts (spoken) recorded in Peru, as well as isolated words, phrases and field notes.[3] The transcriptions are in the official Peruvian Quechua orthography, which is, for the most part, phonemic. However, a few words of explanation are in order:

1. Long vowels are represented as geminates. Syllables containing long vowels are considered to be **heavy** for the purposes of stress assignment; in metrical tree structure, this is represented as a branching nucleus. (All other syllables, with few exceptions -to be discussed- are **light**).

2. **aw, ay, uy** and **iy** represent diphthongs, which behave like the long vowels (ie. branching nuclei)for the purposes of stress assignment.

3. **q** is a uvular fricative.

4. The alveolar affricate represented as **ts** is interpreted as a single segment in the phonology of ConQ, as is the palatal lateral **ll**.

2.3 Previous analyses

The study of stress has not been a "hot topic" in Quechua studies. Because stress rarely performs a contrastive function at the word level, it is often dismissed as "predictable" and left for the greener pastures of morphology and syntax. Most recently, Adelaar (1984:27) comments: "In most Quechua dialects... stress is usually assigned to the penultimate syllable in a word-form... However, word-final long vowels are stressed when they include a first-person marker consisting of length." Adelaar notes, however, that in Huaraz, a neighboring dialect to ConQ, this pattern is **not** followed.

A tendency towards word-**initial** stress is reported for Huaraz by Parker (1976), Weber and Landerman (to appear), and Larsen and Levengood (1982). In Pomabamba, just on the other side of the hill, so to speak (a ConQ area), Larsen and Phelps (circa 1975) report that "stress is on the penultimate syllable with few exceptions." To my knowledge, however, in neither dialect has a thorough study of stress been undertaken. The ConQ dialect is a good place to begin an investigation into Quechua stress for at least two reasons:

1. The reported penultimate strength indicates that it may be typical of the majority of Quechua dialects in central Peru.

2. Its close geographical proximity to the Huaraz dialect, where initial stress has been reported in the literature, alerts us to the possibility of a similar tendency in ConQ.

3 Preliminary metrical analysis

In ConQ, word-level main stress typically falls on the penultimate syllable, secondary stress on the initial syllable, and tertiary stresses on alternating syllables preceding the penult. Disregarding vocalic length for the moment, and thus, quantity sensitivity in metrical tree construction, the following rules will account for the system:

(1) **Metrical Analysis** (Initial Version)

Foot construction

a. Projecting (+syl) segments within the rime, assign a binary left-dominant foot at the left edge of the word.
b. Assign a binary left-dominant foot at the right edge of the word.
c. Group the remaining syllables of the word into similar feet, going from right to left.

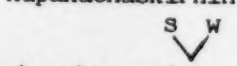
Word-tree construction

d. Form a right-dominant word tree. Remove non-branching non-initial feet in weak position.

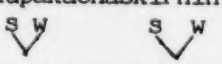
(1) will yield forms such as the following:

(2) Apply:

1a. kùpakàchaskírnin 'having patted it down'



1b. kùpakàchaskírnin



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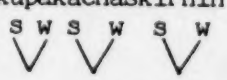
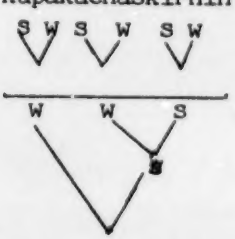
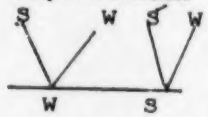


1d. kùpakàchaskírnin



(3) tlìmputsíntsik 'we boil it.'

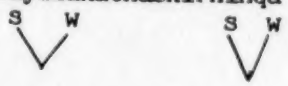


Notice that (1c) is not applied in (3) because all of the syllables are already footed by (a) and (b).

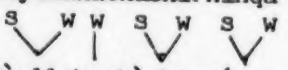
The word tree in (3) nicely expresses the relative strength of the secondary and tertiary stresses according to their depth of embedding in the tree. (4) illustrates the need for the right-to-left directionality clause in (1c), as well as the clause in (1d) about removing non-branching feet in weak position:

(4) a. màyllakachàskirnínqa 'having washed it up'

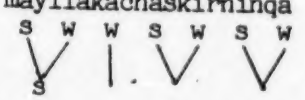
b. màyllakachàskirnínqa

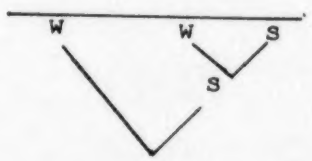


c. màyllakachàskirnínqa



d. màyllakachàskirnínqa



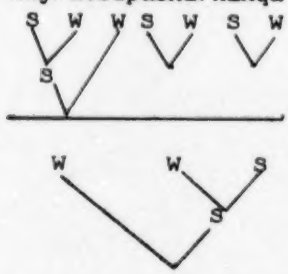


The above rules will account for lexical stress in ConQ words of any length, provided that they only contain short syllables. Further examples follow:

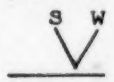
(5) tsáy 'that'

(6) márka 'town'

(7) wàyratsipàskirnínqa 'having aired it out'



(8) yakúman 'towards the water'



(8) Has an optional variant with main stress falling **initially**: **yákuman**. This situation is typical of three-syllable words with light syllables only, among them the following:

(9) yakú-ta~yáku-ta 'to the water'
water-Acc

(10) riká-kan~ríka-kan 'it is seen'
see-pass-3

(11) runá-pa~rúna-pa 'of the man'
man-Gen

Notice that the **root** stress in each of the above examples (the root being the initial two syllables) is predictable by clause (a) of the Foot Construction Rules:

(9) a. yáku 'water'

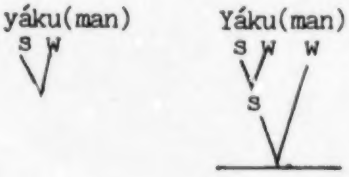
(10) a. ríka- 'see'

(11) a. rúna 'man'

When the final syllables, **-ta**, **-kan** and **-pa** are affixed, speakers

apparently opt either to retain the original stress or to permit the affixed suffixes to cause the stress to shift rightward. This initial stress is precisely what has been reported as a general tendency in the neighboring Huaraz dialect. In effect, the root stress is preserved and the final syllables are extrametrical, that is, "skipped over in foot construction" (Hayes 1980:72), in the cases where they do not shift the stress. A suggested derivation for **yakuman** with initial stress follows, with extrametricality indicated by parentheses:

(12)



4 Analysis incorporating quantity sensitivity

4.1 Disyllabic words

Were we to conclude our analysis of Quechua stress at this point, we would be making a grave error, as we would be disregarding a fairly crucial fact about the language: namely, that words are more likely than not to contain at least one long vowel. Furthermore, as long vowels have been reported to attract main stress in other dialects of Quechua word-finally, the relevant data from ConQ needs to be perused.

Disyllabic words in ConQ are main-stressed initially (ie. penultimately) regardless of whether or not either or both syllables have branching nuclei. Vowel length in either syllable **does** attract secondary stress, however, so quantity sensitivity is not irrelevant.

Compare the following pairs:

	(a)			(b)	
(13)	kútìi	'I return'	and	kúti	'turn'
	wámràa	'my child'	and	wámra	'child'
	cháarìi	'I arrive'	and	chári	'yes indeed'

The difference between the long and the short vowels in the second syllables (13a) and (13b) indicates the need to incorporate **quantity sensitivity** (QS) into the rules. (QS) insures that no long vowels (branching nuclei in tree construction) will be labeled recessive, since, in Hayes' framework, recessive (weak) nodes cannot branch:

> **Foot Construction** (a) (revised): Assign a **binary quantity** sensitive left-dominant foot at the right edge of the word, where quantity is defined as a branching nucleus.

As a result, the second syllable in (14) **kútìi** cannot be labeled **w**, but must be given independent foot status (i.e. degenerate).

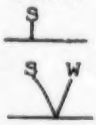
Clearly, the difference in secondary stress between groups (13a) and (13b) needs to be incorporated into the tree geometry:

(14) Two Feet: (a) kútìi

One Foot: (b) kúti

We are also obliged to construct a **left**-dominant instead of a right-dominant word tree to complete the derivation of **kútìi**:

(14) a. (Revised version) kútìi

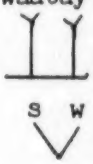


The Word-Tree Construction Rule is modified accordingly:

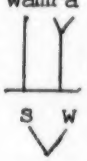
> **Word-tree construction** (revised): Form a left-dominant word tree iff the word is disyllabic (a biped!) Otherwise, form a right-dominant word tree. Remove non-branching feet in weak non-initial position.

Trees can now be freely constructed for words such as these:

(15) wáatày 'to take care of'



(16) wámrà 'my child'

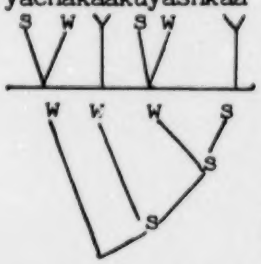


Notice that this modification will not affect the tree structure for forms like (14b) **kuti**, because (1d) does not apply in these cases.

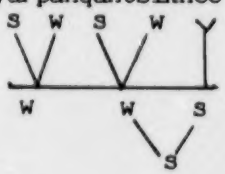
4.2 Polysyllabic words

The assignment of **final** main stress in polysyllabic words ending with heavy syllables is predicted by the Foot Construction (FC) rules, as revised for Quantity Sensitivity (QS). Since final long vowels usually attract main stress when following a short penult, the metrical rules accomodate themselves economically to the realities of the language. The word-tree, however, remains right-dominant:

(17) yàchakàakuyashkáa 'I have become completely adjusted.'

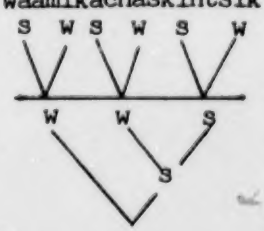


(18) yàrpanqàntsiknóo 'just as we have thought'

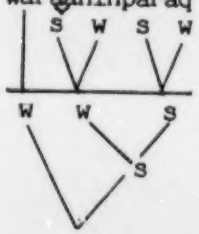


Notice that (QS) or quantity sensitivity is required also in the assignment of the initial foot at the left edge of the word. Contrast (19) and (20):

(19) wàamikàchaskíntsik 'We beat it up.'



(20) waràqaninpáraq 'yet for tomorrow'



Quantity sensitivity in the assignment of the initial foot in (20) insures that the initial syllable is a separate foot, as the long vowel (branching nucleus) in the second syllable must be labeled **s**, to avoid a branching recessive node. To accomodate Quantity Sensitivity in all cases, FC (b) and (c) are revised as follows:

> **Foot Construction** (revised): (b) Assign a binary QS foot at the left edge of the word. (c) Going from right to left, group the remaining syllable of the word into QS left-dominant feet.

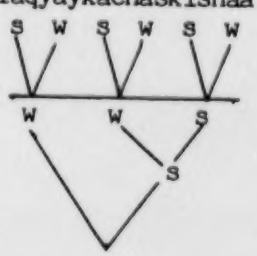
FC (a) stands as revised in Sect. 4.1.

In summary, QS is required throughout the tree construction process.

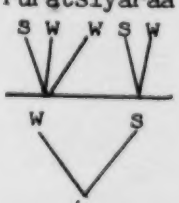
4.3 Quantity Sensitivity Suppression

As mentioned above, final long vowels **usually** attract stress when they follow a **short** penult. However, this is not **always** the case. Consider the following:

(21) làqyaykàchaskíshàa 'I will repeatedly slap.'

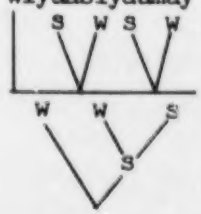


(22) rùrątsiyáràa 'We caused it to be done.'

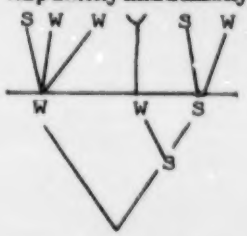


The above examples illustrate the fact that, if a heavy final syllable is preceded by a light penult, the penult may still receive main stress. Stress **always** falls on the penultimate syllable in words ending in two heavy syllables:

(23) wiyàasiyaámày 'Accompany me in listening.'



(24) hìpiskayàalláamày 'Get me out of here!'

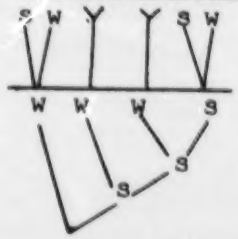


To accomodate the above patterns in the FC rules, the following clause may be added to FC:

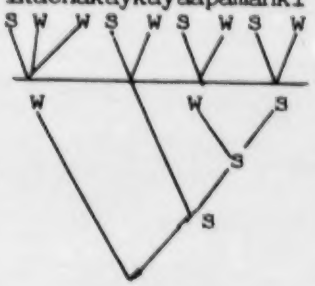
> Suppress QS in the two final syllables if nuclei in both syllables are branching. Optionally, suppress QS in final heavy syllables following a light penult.

I shall call this Quantity Sensitivity Suppression (QSS). QSS applies only to the final two syllables. Since there is no length asymmetry in the relationship between two heavy syllables, it is not surprising that penultimate main stress "wins out." In any case, length consistently attracts secondary stress, as the following examples illustrate:

(25) hàmalàallàachóomi 'just way up there'



(26) rìkachakàykayàapamánki 'You all look after it carefully for me.'



5 The three-syllable level

As mentioned above, three-syllable words tend to bear initial main stress; on the other hand they often bear penultimate main stress. In the first case, they behave as has been reported for Huaraz, in the second, as has been reported in other dialects of Quechua. In this section, we will explore this hybrid system in more detail, with special reference to the influence of QS.

In our initial analysis of three-syllable words without long vowels, the optional initial main stress variants (of penultimate stress) could be expressed in metrical terms as having an optional extrametrical final syllable. This mechanism averted the need to construct a left-dominant word tree. When long vowels are admitted into the picture, however, we lose this option: here, just as in disyllabic and polysyllabic words, long vowels attract secondary stress and need to be taken into consideration in tree construction, at least at the foot level. It is thus difficult to avoid the construction of a left-dominant word tree in cases where primary stress is initial and final secondary stress is present because of vowel length. Since our analysis of disyllabic words with final vowel length led us to essentially the same conclusion, we need only extend the stipulation about left-dominance in word-tree construction to include three-syllable words optionally.

There are, however, some additional facts to be considered at the three-syllable level:

1. Heavy penults **always** attract main-stress. **Heavy** penults in three-syllable words include syllables with branching **rimes** (closed syllables) as well as branching nuclei:[4]

(27) wa.ráa.nin 'day after tomorrow'

qay.wín.tsik 'we stir it'

mu.náy.kàa 'I want (it)'

2. Light penults preceded by a heavy initial **never** bear main stress. It is always initial in these cases. Light penults may bear stress if the preceding initial is light:

(28) a. cháa.ra.mun 'he arrives'

yáy.ku.skìi 'I enter (perfective)'

(28) b. qó.ya.ràa qo.yá.ràa 'I stayed'

3. Final heavy syllables may, but need not necessarily, bear main stress if and only if the preceding syllables are both light:

(29) qóyáràa ~ qoyáràa ~ qòyaráa 'I stayed'

yúriràa ~ yuríràa ~ yùriráa 'I was born'

In other words, the only insurance that main-stress will be penultimate is if that syllable has a long vowel or is closed. Otherwise the main-stressed syllable will be the initial, with the following gray areas:

a) If only the final syllable has a long vowel, main-stress **may** optionally fall there,[5]

or,

b) The case treated in Sect. 3, where stress is **likely** to be penultimate **in words** when all three syllables are short.

In order to accommodate these facts into the existing rule-system, we will need to qualify QS in FC (a), which in its present form, is sensitive only to branching nuclei:

> **Quantity Sensitivity**: In three-syllable words, penults with branching rimes are counted as heavy.

In order to formalize the fact that, at times, we will want to construct right-dominant word trees for three-syllable words, (as for polysyllabic words) and, at others, left-dominant word trees (as for disyllabic words), we can add a stipulation that the dominant node in three-syllable words must branch in order to be labled **s**:

> In word-trees for three-syllable words, label the right node strong IFF it branches.

This will inhibit construction of the correct trees for forms like **ràn˚tish˚káa** and **qò˚ya˚ráa**, where the dominant node does not branch, but main stress is on the final degenerate foot with a branching nucleus. Note that for **ràn˚tish˚káa**, however, our rules predict ***ran˚tísh˚kàa**, anyway. Since I know of no cases where **-shkaa** ´first person perfect´ does not bear the main stress in a word it appears in, the reasonable solution here is to mark this suffix as ¡+MS¿ (+main stress) in the lexicon. Cases like **qòyaráa** will simply have to be marked as final-stressed in the lexicon, optionally. This takes the baggage of "might" or "may" be stressed out of the rules and places it in the lexicon, where it belongs. This is not unreasonable, since final syllable weight has very peripheral influence at the three-syllable level, anyway. The revised form of the Word-tree construction rule now reads as follows:

(1d) **Word-tree construction** (revised): Form a right-dominant word tree. In words of less than four syllables, label the right node as **s** iff it branches.

Notice that, for words with two heavy syllables at the right edge, such as **munáykàa** ´I want´ and **yàchakúykàa** ´I am learning´, QSS is invoked.

In summary, instability at the three-syllable level for ConQ words may indicate a growing tendency towards initial stress, as in the Quechua of Huaraz.[6]

6 Summary of metrical rules

Foot Construction:

a) Projecting (+syl) segments within the rime, assign a binary quantity sensitive left-dominant foot at the right edge of the word, where quantity is defined as a branching nucleus. Penults with branching rimes in three-syllable words are counted as heavy.

b) Assign a binary quantity sensitive left-dominant foot at the left edge of the word.

c) Going from right to left, group the remaining syllables of the word into quantity sensitive left-dominant feet.

Quantity Sensitivity Suppression: Suppress QS in the final two final syllables of a word if the nuclei in both are branching. Optionally, suppress QS in final heavy syllables following a light penult.

Word-Tree Construction

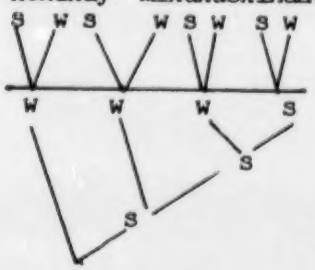
d) In word trees for words of three syllables or less, label the right node strong iff it branches. Otherwise, form a left-dominant word tree. In word trees for words of more than three syllables, form a right-dominant word tree following the unmarked labeling convention. Remove non-branching feet in weak non-initial position.

These rules provide a working mechanism for the assignment of word-level stress in ConQ.

7 Lexical levels in stress assignment

Levinsohn (1976:20) mentions the following about Inga, a variety of Quechua spoken in Colombia: "The grammatical word does not coincide with the stress group." This is an intriguing statement in light of the fact that it can be understood to refer either to a state of affairs in which more than a single word is the domain of lexical stress assignment, or, conversely, that less than a single word can be a sufficient unit for the application of word-level stress assignment. Levinsohn does not elaborate further about Inga. Also in ConQ, either interpretation can be applied and can be used to explain some otherwise puzzling cases. Considering the first situation, where more than a single word is the domain of lexical stress assignment, notice the stress pattern in the following example:

(30) Áchikày mikùkuskínàa. 'The "Achikay" (wicked old woman) ate it up.'



Unless the two words are taken as a single unit for stress purposes, it is difficult to explain, if not impossible, why **mikùkuskínàa** does not bear initial secondary stress. (Notice that QSS is invoked to derive the correct main stress.) In other words, the stress rule applies **after** the two words have been concatenated. Borrowing some terminology from lexical phonology, one could say that the concatenation takes place at level (n-1), while stress applies at level (n).

Moving to the second situation, where stress applies at levels beneath the word, consider the following cases with **two** main stresses within the word:

(31) hákàakunáta 'my guinea pigs (acc.)'

(32) púriqkunáman 'towards those who are walking'

(33) kèedanantsíkpaqkáqta 'that which is to stay for us'

(34) taríntsikpístsu 'we don't find it at all'

If each of the above examples is divided in the following manner, the metrical tree construction rules for words can apply:

(31) a. hákàa kuná-ta

(32) a. púriq kuná-man

(33) a. kèedanantsíkpaq káq-ta

(34) a. taríntsik pís-tsu

The pluralizer **-kuna**, the definitivizer **-kaq** and, frequently the clitic **-pis** 'also, behave as separate words for stress placement. Drawing again on the insights of lexical phonology, we can say that these, and other suffixes like them, are affixed at level (n+1), following the assignment of stress at level (n).

Even with a level-oriented approach in which the phonological word is not necessarily to be equated with the syntactic word, we are left with a considerable number of words with **antepenultimate** stress. These can be understood systematically if we consider the notion of stress-neutral clitics which are affixed at level (n+1). These are never considered to be "words" for the purposes of stress placement, at level (n), and can therefore be determined as extrametrical for the purposes of stress placement. Among the clitics which behave in this manner, the most consistent is the ablative **-pita**, but others are typical as well, including **-lla** 'just', **-lla-raq** 'just yet', **-ta** 'accusative', **-qa** 'now', and at times, the so-called 'topic' marker **-qa**. Consider the following:

(35) wàtukàykayàamunqáyki(ta) 'your having visited here (acc.)'

(36) ràkikàayanqáa(pita) 'after our separation'

(37) yànapàasháyki(llam) 'I will just accompany you.'

In short, extrametricality and the layered interaction of affixation and stress assignment provide systematic explanations for a large number of words which would otherwise have to be marked for their idiosyncratic behavior regarding stress.

8 Concluding remarks

This study has shown the metrical approach to be an effective means for describing the stress system of ConQ. Furthermore, the metrical framework has enabled us to make graphic distinctions between relative degrees of stress in a way not feasible in a strictly linear approach. Metrical theory has thus proven to be an insightful vehicle for ConQ stress analysis at the word level. An extension of this approach to the phrase level and above should prove fruitful, as should its application to the analysis of other languages in the Quechua family.

Notes

1. I wish to thank Peter Landerman, Steve Anderson and Bruce Hayes for their valuable input in the preparation of this paper, and Hu Mathews, Dan Everett and Diana Weber for their insightful editing comments. Any remaining errors or inconsistencies are the sole responsibility of the author.

2. The suffix **-ski** (with its morphophonemic variant **-ska**) in ConQ, a marker of perfective aspect, patterns as a single syllable with an

initial consonant cluster. This is the only exception to the tautosyllabic cluster constraint that I am aware of.

3. These were collected during field work in Peru from 1979-82 under the auspices of the Summer Institute of Linguistics.

4. In the data available, all medial syllables in trisyllabic words are c;psed bu respmamts, but, in the absence of evidence to the contrary, it is best to state the rules in the most general terms possible. A dot indicates syllable boundary.

5. Some three-syllable words which should be able to bear final main stress are apparently marked for initial stress only. One example is **mállaqày** 'to hunger.' Peter Landerman (personal communication) mentions that this may be an instance of a general tendency in the direction of disyllabicity in Quechua, and that the medial "a" may be on its way "out."

6. Interestingly, Larsen and Levengood (1982:10) mention that trisyllabic words with closed penults in the Quechua of Huaraz have primary stress on the penult. This may be one of the Huaraz-like features of ConQ. Some three-syllable words which should be able

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